MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

AIRLINES
ANNOUNCE
1958
FIGURES

See Page 11

VOL. LXXX No. 2076 [*Registered at the G.P.O. as a newspaper*] LONDON, JANUARY 10, 1959 PRICE NINEPENCE

Current Topics

London Trolleybus Replacement

THE long expected replacement of life-expired London trolleybuses has been fixed to begin on Sunday, March 1. Three South of the Thames trolleybus routes are to be changed over on that date, it is announced by the London Transport Executive. The routes are 654, Sutton to Crystal Palace (operated from Carshalton depot), 696, Dartford to Woolwich, and 698, Bexleyheath to Woolwich (both operated from Bexleyheath). The second stage is due on April 26 with a group of three North-east London trolleybus routes, 555, 581 and 677, serving the Leyton, Clapton, Woodford and West India Docks areas, from Clapton and Lea Bridge depots. The remaining trolleybuses will be withdrawn in stages at three- or four-monthly intervals, at dates to be announced later, except the group based on Fulwall depot where postwar trolleybuses will remain in use. For the first stage, buses of the standard RT type will be used, as suggested in our columns recently. These have become spare owing to reductions in service following the fall in London bus passengers. This will enable the operation to be carried through at an earlier date than originally planned. A fleet of 850 RM type 64-seat vehicles has, however, been ordered for trolleybus replacement. Retraining of trolleybus drivers with diesel buses has already begun at the depots affected by the first stage of the conversion; the installation of fuelling equipment at the depots converted into bus garages is one of the governing factors in the timing of the scheme. Lea Bridge is responsible for only a score of scheduled trolleybuses and will not be converted to a bus garage.

Work Study

AS transport undertakings are required to give a reliable service at an economical rate it is clear that the techniques of work study, as one of the tools of management, must play an increasing part. Work study is simply the application of analysis and measurement to the processes of work with a view to their performance to the greatest possible advantage. The study can be of great value both to management and staff in properly assessing the rewards given in connection with incentive schemes and as an aid to planning. It is by no means confined to highly repetitive operations; it can be applied to operational conditions as well as to maintenance or constructional work. One of the great advantages of work study is that the improvements often do not involve the installation of new and expensive equipment, but rather the better utilisation of existing facilities. Great importance must be attached to the human relations aspect of work study; there is need for full consultation with the staff at all levels. In British Transport Commission work this has been well recognised. Training in work study methods has been available for B.T.C. staff at The Grove, Watford, since 1957, but some departments have a much longer experience of its value than that. The paper read on the subject to the Metropolitan Section of the Institute of Transport on January 5 by Mr. David McKenna, assistant general manager of the Southern Region and hon. treasurer of the Institute, gave a valuable and timely insight into methods and policy. An abstract appears elsewhere in this issue. It is perhaps worth emphasis that useful as work study methods and other analytical bases of better organisation may be, they should never be allowed to become a cult that makes itself the be-all and end-all of the undertaking; they are best used as handmaidens to the main purpose of transport.

Misbehaviour by Passengers

THE sporting British public is always inclined to applaud a little flouting of authority and perhaps even to emulate it, but in due time commonsense returns and the decent and proper again becomes the thing. So undue importance need not be attached to the recent succession of sit-down strikes in which passengers have refused to leave London Underground trains because they were being turned back short of their intended destinations for service reasons or were being taken out of service through a defect. In the case of the initial Barking incident an impression has gained ground that Dagenham trains are picked on for summary termination, but in any event, on a cold mid-winter evening decisions made reasonably in a distant controller's office may seem a comfortless answer to passengers called on to alight. Mr. Brian Harbour, a member of the London Transport Executive, has very properly reminded Londoners of what readers will be aware, that trains are not turned back without good and adequate reasons. The passengers concerned in holding up the service will do well to remember that while they were enjoying their ill-timed direct action against train and station staff who were doing their best to rectify a gap in the service, in trains piling up behind that of the recalcitrants, thousands of people who knew nothing of what was afoot were brought to a dead stand between stations and were needlessly delayed on their way home. The selfishness of the passengers at Barking and Finchley Central is comparable with that of a suicide who is determined that his passing shall be an occasion of inconvenience to his fellow men. In the same category come the merrymakers on a foggy Christmas Eve who by opening the door of a main-line train brought about the search of a junction area and miles of track in case someone had fallen out and suffered injury, with resultant delay to several hundred others who were only intent on minding their own business. The unfair thing is that the railway was then blamed for late running. One remedy for dissatisfaction does lie in the hands of transport undertakings and it is one that is not always taken—that is proper dissemination of information to station and train staff so that passengers can be given some reason for delay that sounds credible. The L.T.S. Line teleprinters are a great advance. Loudspeakers can be used for passing on special news to passengers, but staff must not assume passengers have, in fact, heard loudspeaker announcements, especially if train doors are shut. Passengers are, at heart, reasonable beings, but they sometimes need a little guidance.

Flyover Progress

PROGRESS is being made towards removing one of the causes of irregular running on the District Line of London Transport; that is, the extensive reconstruction works taking place at Barking to provide separate tracks throughout for the Underground service and non-conflicting routes for Eastern Region trains. The Barking flyovers and the works on a coaching stock depot for the London, Tilbury and Southend Line at Little Ilford (whence the District car shed has been moved to Upminster) are preparatory to the electrification of the L.T.S. Line between Fenchurch Street and Shoeburyness via Upminster and Southend Central and via Tilbury. On January 5 a flyover was brought into service enabling boat trains between St. Pancras and Tilbury and freight between the Midlands and Thameside destinations via Ripple Lane marshalling yard to pass across the District Line and the Southend route without causing delay to traffic thereon. The Mayor of Barking, Councillor G. Beane, was present when the inaugural freight train, hauled by a Bo-Bo diesel and including cement wagons, petrol tanks and motor cars on flat wagons, set out on the 1-in-80 gradient over the 440-yd. structure, which includes nearly 20,000 tons of concrete. Between 40,000 and 50,000 people use the station daily and the crossings at the east end are traversed by 700 trains each day. The St. Pancras—Barking suburban service is already accommodated on a terminal track with non-conflicting approach, while District trains will be given cross-platform interchange with L.T.S. services. In view of the complexity of the scheme, which has to be carried out on a site of limited width while a very heavy service is provided on adjacent tracks, it is extraordinary rather that train services have suffered so little disruption than that there has been so much.

LEADING FEATURES IN THIS ISSUE

Canada's Third Largest

FOR many years the Pacific Great Eastern Railway languished like a Canadian version of the ill-fated Manchester and Milford, starting from the tiny backwoods port of Squamish on an inlet in the British Columbia coast and terminating in the middle of nowhere at Quesnel. Its only connection with the outside world was by a freight car ferry from Squamish to Vancouver. It had been designed as a means of giving the Grand Trunk Pacific Railway—which had its main-line west coast terminal at Prince Rupert—access to Vancouver, but that scheme was defeated by the association of the G.T.P.R. with the Canadian Northern Pacific, another integral part of the eventual Canadian National system, which had its own line from Edmonton into Vancouver. The P.G.E. scheme came to a standstill and was only partially revived by being taken over in 1918 by the province of British Columbia. After the recent war Premier Byron C. Johnson realised the benefits of completing the original scheme and we discussed the plans with him during 1951 in his office at Victoria, B.C. It fell to his successor, Mr. W. A. C. Bennett, to see completion in 1953 of the line from Quesnel over the 80 miles to Prince George on the Canadian National northern trans-continental main line to Prince Rupert, and at the other end from Squamish into Vancouver, in 1956. The line now had some meaning and purpose and operating revenue more than doubled between 1953 and 1957, when it totalled $8,768,000. Now the original plan has been implemented of going north of Prince George into the Peace River country, a part of British Columbia hitherto reached via Edmonton and the Northern Alberta Railway. Now the 324 miles to Dawson Creek (population 10,000) and Fort St. John (population 5,000) are in service and the jubilant premier of British Columbia talked at the opening of the "third largest railway in Canada" going on to the Yukon soon. One important factor in future traffic on the Pacific Great Eastern, no longer deserving of the sneer of "Prince George eventually," is the Wenner-Gren scheme for developing forestry, mineral, agricultural and hydro-electric resources in the north of British Columbia.

Traffic Wardens

WITH provincial police forces in England and Wales still nearly 4,000 below establishment and both petty crime and traffic congestion still on the increase, it seems likely that others will follow the lead of the Chief Constable of Nottingham, whose deputation to press for authority to form a force of traffic wardens was due to be received at the Home Office this week. With whatever objections the delegation has been met by Home Office officials on this occasion (and this is by no means the first approach), it is clear that the kind of reform envisaged, which would free hundreds of foot police in our towns and cities to get on with their primary task, is long overdue. The Minister of Transport is known to be in favour of the establishment of traffic wardens, as are many senior police officers. In any case the public already accepts unofficial control and advice from school traffic wardens, A.A. and R.A.C. patrols and others and whatever real or fancied legal or political difficulties paralyse the official Home Office mind, these are surely not insuperable. What is as important as an early decision in favour of traffic wardens is recruitment of the right type of individual for the job; ex-police officers and servicemen appear a likely source of good material.

Deodorising the Diesel

A RECENT report from America claims that in two cities, Chicago and Philadelphia, a device designed to deodorise diesel engine exhausts has been successfully tested on buses over a period of three months. The deodoriser is in the form of an atomiser which takes air from a compresser and blows it through a container of chemical into the exhaust stream. The chemical, named Dieselline, has an affinity for formaldehyde, said in the report to be the end product of diesel combustion, and thus eliminates the unpleasant smell. There have, of course, been several earlier attempts to change the characteristics of diesel exhaust by fitting some device or other, but all have proved abortive. It seems to us that the American report oversimplifies the problem since the end products of diesel combustion are not formaldehyde, but largely carbon dioxide, occasionally some carbon monoxide, oxides of nitrogen under some operating conditions, traces of unburnt hydrocarbons and only a very small proportion (50 parts per million is a normal maximum) of mixed aldehydes. Although undoubtedly the aldehyde content when present can give diesel exhaust an unpleasant odour, a device of the type described seems unlikely to be as effective in removing it as a washing unit using a suitable solvent. After long study collective authoritative opinion is that the exhaust emission from a well-designed and properly maintained diesel engine is innocuous; in any case it seems to us that an operator who countenances obnoxious exhaust due to poor maintenance is no more likely to spare thought for the necessary maintenance of an additional complication than for the normal engine and fuel-pump components where, by application of the correct routine, obnoxious fumes can be stopped at source.

MODERN TRANSPORT

Published Every Friday
RUSSELL COURT, 3-16 WOBURN PLACE, LONDON, W.C.1

Telephone Number: TERminus 0303 (3 lines)
Telegraphic Address: Transpubco, Westcent, London

ANNUAL SUBSCRIPTIONS
BRITISH ISLES, 35/-; CANADA, 32/6;
ELSEWHERE ABROAD, 35/-
payable in advance and postage free

The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

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Fighting Back

DURING 1958 public transport, freight and passenger, appeared to lose traffic more heavily than before to the private sector. Some stocktaking of the position is therefore not inappropriate at the beginning of a new year and is in many ways encouraging, once it is recognised that there are spheres where public transport has lost the battle for ever, such as the 18,000 miles of interurban electric railway in America which were so busy before the coming of the automobile and have now almost all disappeared. Commenting on the fact that out of a revenue which exceeded £1 million East Yorkshire Motor Services had a net profit of £10,850 or a bare fraction over 1 per cent, Mr. J. Spencer Wills, the chairman, told members of the company at the annual general meeting on December 17:

> "Let it not be imagined, however, that I foresee from this an end to the usefulness of our company, or indeed of any material part of the provincial bus industry. I certainly do not. In our own case, for example, although last year we carried 10 per cent fewer passengers than we did three years earlier, we nevertheless carried 80 per cent more than in the year before the war (1938-39); and similar large increases have, I believe, been experienced by most other provincial operators over the past two decades. The present decline is as yet small compared with the expansion which preceded it.
>
> "It is true that private motor transport is becoming increasingly within the means of those who have been our passengers—or perhaps I should say that the means of those who have been our passengers are becoming increasingly equal to what they imagine to be the cost of private motor transport. Yet, on the other hand, total passenger movement still increases rapidly, with the rising standard of living. Distance is becoming less and less of an obstacle in people's minds; so much less that private motoring may well expand as fast as is predicted and yet leave a very substantial market to be served by companies like ours."

Remarks by Mr. Wills on the future of rural services and of the Government attitude to them were the subject of reference in our January 3 issue.

What Employees Can Do

AT a dinner of the E.Y.M.S. 25 Club, comprising members of the staff who have been on the strength for a quarter-century or more, Mr. C. G. Burks, a driver from Hornsea depot, reviewed the effect of falling traffics and the redundancy thereby created. But, he said, there was a lot could be done about it. The company was spending money on more comfortable and attractive vehicles. The road staff could do its share and it would cost it nothing in cash. Let them be pioneers in an all-out courtesy drive, more friendly to passengers, more helpful to the aged and to women with small children and prams, let them show tolerance to the awkward passenger and to all let them show civility, politeness and good humour. In his reply Mr. A. F. R. Carling, managing director of East Yorkshire, said they were proud of their good reputation and he hoped that although they had had to go slow on new rolling stock, the flow would resume in 1960. If the fares application then pending was successful, long-distance fares would still be less than twice the prewar level and short-distance fares on average would be less than twice prewar, while costs were three times what they were. Few things had gone up in less proportion than East Yorkshire bus fares, but they did have to adjust charges to the change in the value of money. At the East Midland annual meting the chairman, Mr. R. J. Ellery, showed shareholders how the same sort of problem had been tackled by reduced car-mileage (nearly 250,000 reduction) enabling the peak vehicle allocation of 232 in 1958 to be only 11 more than in 1956, despite the acquisition of the Truman business with 50 vehicles and Wass Brothers with 10. The fleet was cut to 251 compared with 303 18 months ago. Yet, compared with prewar, better services and many more seat-miles were offered. Help had been obtained from the lifting of the bridge at Works Road, Staveley, by co-operation over the cost between the bus company, the county highway authority, Chesterfield Corporation and the Staveley Iron Company, owners of the bridge. That had enabled operation of orthodox underfloor-engined buses on the route and a clearing out of obsolete uneconomical types.

Confidence in the Railway

IN his year-end statement on Canadian Pacific Railway affairs Mr. N. R. Crump, president, demonstrates his firm belief in Canada and the future of the C.P.R. as an integrated land, sea and air transport enterprise. With 950 diesel units the railway performs 95 per cent of its haulage by that means. Much is being spent on new marshalling yards, signalling and permanent way improvement. Centralised traffic control, operated by one dispatcher from Toronto, is being extended to run from Toronto to Trenton in the direction of Montreal. Control has been obtained of Smithson's Holdings, Limited, carrying with it Smith Transport, Limited, the large trucking firm; altogether 10,000 route-miles of road freight activity are operated, extending from coast to coast. The piggyback service for through transits of hauliers' trailers between Montreal and Toronto began in October, 1957, and has already been greatly extended, to New Brunswick, the Lakes and in Western Canada. Soon this facility will be provided from coast to coast and C.P.R.'s own piggyback operations are to play a large part. A special merchandise service organisation was set up to study, plan and implement changes needed in handling less-than-carload traffic. Co-ordination is sought between rail and road facilities to give a completely modern integrated service for customers' merchandise. Passenger service needs are also being studied and the Royal York Hotel in Toronto, to which 400 rooms are being added, will, with 1,600, be the largest in the Commonwealth.

Making Railways Competitive

ACTIONS described by Mr. Crump in his review and also in his address to the Institute of Transport in November run, of course, parallel to those on British Railways in fighting back for traffic. Much is happening, despite the very apparent difficulties of the moment, that fully justifies Mr. Charles Whitworth's confidence that in the jet age the railways can prove they are just as vital to the national economy as they were in the 19th century—not now because they are on a monopoly basis but because they can afford the cheapest in real terms and most satisfactory way of meeting a large part of the nation's transport requirements. Mr. Whitworth, who is on the staff of the general manager of the Eastern Region, was reading a paper to the Metropolitan Section of the Institute of Transport, in which he had earlier set out some principles for replanning:

> Concentration on the comparatively small number of stations and private sidings responsible for most of the traffic was the first need; it would produce both economies and operating advantages. Rationalisation of installations, services and working in the great industrial areas would be a heavy task and the cost would be high, but the economies in operation and the improvements in service would be enormous. Duplicate routes and staged transits and the too many, too small, too old and too expensive terminals would be replaced by a few correctly sited low-cost terminals and yards. The conventional terminal should in fact be eliminated and replaced by pallets, containers, piggybacks (if British loading-gauge difficulties could be overcome) and road-rail vehicles to give transits from point of origin to destination. The railways must gear themselves to new conceptions of the value of equipment and the need to make maximum use of it.

Finally there must be a forward thinking and flexible commercial organisation able to sell the services. It might be added that public transport in general, if it is to fight back towards its old position in general esteem, must learn a lot more about selling the service to win the attention of a public which sees at present only the attractive side of owning its own means of personal transport or of moving its own goods. That calls for co-operation between all forms of transport.

[Forthcoming Events appear on page 10]

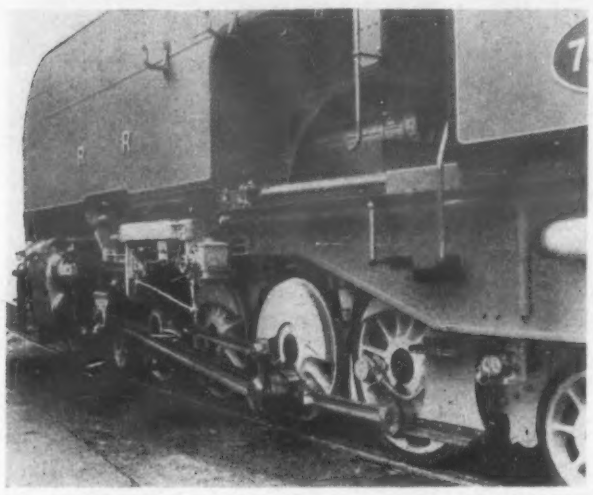
MODERN TRANSPORT has an arrangement with Reuter's Trade Service whereby publication is made in this newspaper of all essential news from all parts of the world concerning traffic and transport by rail, road, sea and air and allied interests.

A HIGHLY DEVELOPED BEYER-GARRATT

A 69,000-lb. Tractive Effort on 80-lb. Rail

RHODESIA RAILWAYS 20A CLASS LOCOMOTIVES

FOR many years there has been a large annual increase in the amount of traffic on the 3 ft. 6 in. gauge Rhodesia Railways, both on the ton-mile and the train-mile bases. To cope with the volume offering, the railway administration has carried out much expansion and improvement in recent years, including extensive re-laying with 80-lb. rail, and increasing the motive power resources. An article outlining progress to date appeared in our March 16, 1957, issue. In the year ended March 31, 1958, the traffic carried created a new record, the tonnage amounting to 11,682,812, which is almost treble that handled in 1947.



Hind engine unit of 20A Class locomotive for Rhodesia

Heavy Traffic

Beyer-Garratt locomotives, since their introduction by the Rhodesia Railways in 1926, backed by first-class maintenance and excellent utilisation, have been responsible for working the bulk of the heavy traffic. Orders for this type of locomotive have totalled 250 engines of different wheel arrangements and capacities. Among the outstanding examples are the 15th Class, introduced in 1940, some of which have achieved a mileage of 10,000 a month, and several of which have covered well over 1 million miles.

This design has proved so suitable that even after 18 years of arduous service these engines are fully able to cope with most exacting demands. In our view the credit for the highly successful results obtained must be shared by the designers, builders, and those charged with the operation and maintenance.

Use of 80-lb. Rail

Deliveries in recent years have included the 20th Class Beyer-Garratt locomotives, 15 of which were built at Gorton in 1954. These locomotives were the first designed with the heavier axle load, permitted by the use of 80-lb. rail, and are able to handle trains of 2,000 tons. The railway's 80-lb. rail main-line re-laying programme has now been completed and stretches from Ndola in Norther Rhodesia through Kafue and Livingstone over the Zambesi at Victoria Falls to Wankie, Bulawayo, Somabula, Gwelo, Salisbury and Umtali—a distance of 1,246 miles. The 248-mile section from Somabula to the Mozambique border at Malvernia is also laid in 80-lb. rail, en route to Lourenco Marques, with a few shorter branches.

Increased Availability

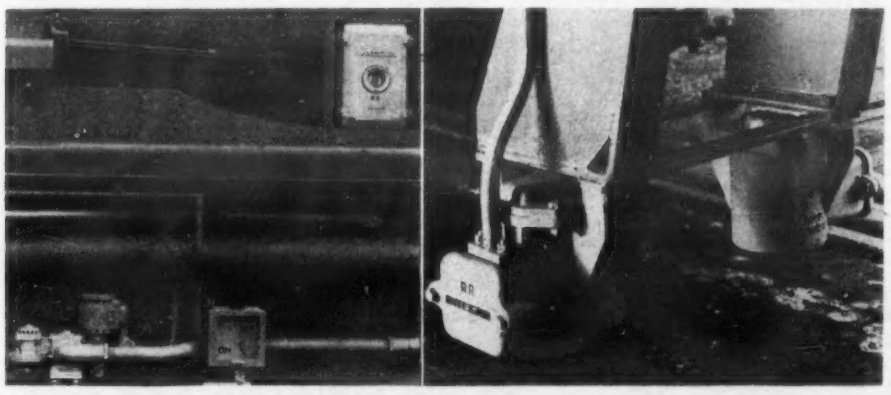
It will be recalled that the 20th Class, excellent examples of modern steam power, which were described in MODERN TRANSPORT of March 12, 1955, incorporated many new features contributing both to efficiency and high availability, among which may be mentioned the Hadfield precision power reverser, the Standard mechanical stoker, roller bearing axleboxes on the carrying axles, and the Beyer Peacock self-adjusting pivot.

While the design of the 15th Class incorporated many features calculated to reduce attention and increase availability, at the time the class was built the Beyer Peacock self-adjusting pivot had not been introduced. This feature, which was incorporated in the 20th Class, has proved to be one of the most important improvements in articulated locomotive design. Continuously immersed in an oil bath, the amount of wear on the new pivot is extremely small, and it is automatically and immediately taken up.

Repeated Design

Not only does the absence of play in the joint improve the riding properties, already good, of this type of locomotive, but it has the important effect of preventing any slack developing, with its associated detrimental results on steam pipe joints, etc. The patented pivot has proved so extraordinarily successful in service that dismantling of the pivot centres for examination, when the locomotive is shopped for general repairs, is no longer necessary.

In view of the very satisfactory performance of the 20th Class it was decided to repeat the design, and in 1956 an order was placed for an additional 46 4-8-2+2-8-4 locomotives of this type, aggregating 3,000,000 lb. in tractive effort. Six of the locomotives supplied against this order were identical with the engines formerly delivered; the remaining 40, known as the 20A Class and numbered up to 760, embodied slight modifications. The 20th Class had bogie and truck wheels of differing diameter; in the 20A Class the diameter of 2 ft. 9 in. is common to all carrying wheels. All the carrying wheels have Timken roller bearing axleboxes. The overall weight of the engine in running order is 250 tons and the maximum axle load 17 tons.



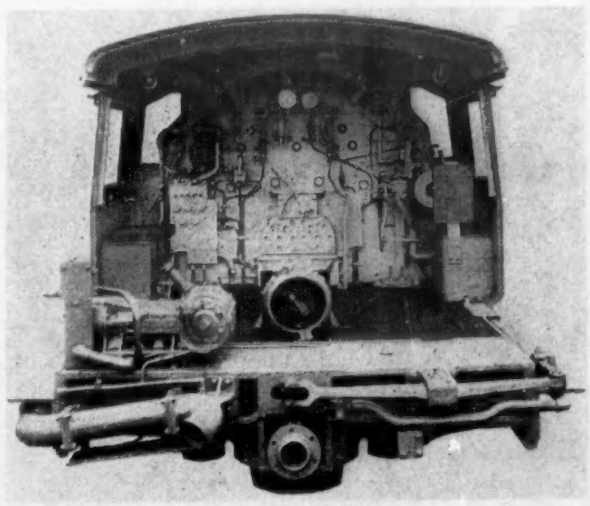
Two of the 20A Class 4-8-2+2-8-4 Beyer-Garratt locomotives for Rhodesia Railways are equipped with the Integra approach warning device: the automatic application valve is seen (left) and the magnets below the locomotive in the right-hand view

Free Steaming

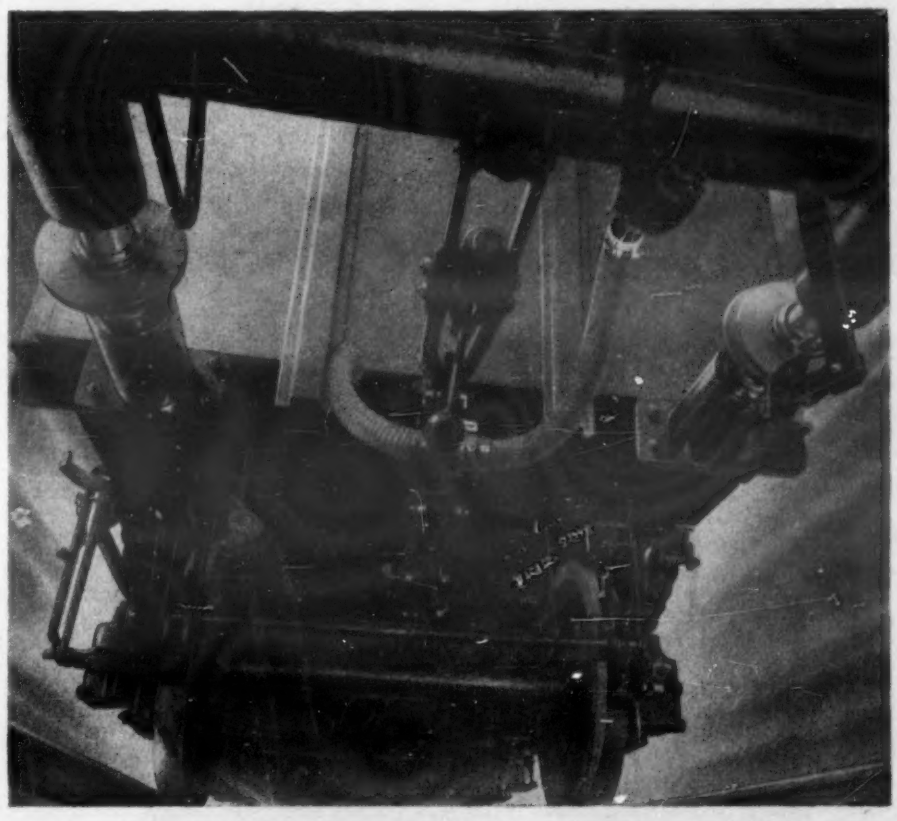
The fuel employed is locally mined at Wankie Collieries; the Standard HT-type mechanical stoker with 5 in. by 5 in. engine and the Waugh firegrate, both also used on the 20th Class, enable all demands on the boiler to be readily met. In this connection the Beyer-Garratt design has considerable advantages, as the practical absence of restrictions on boiler dimensions enables free steaming at economical rates of combustion to be easily achieved, even if the fuel is of poor quality.

Items of equipment and their sources of supply are similar to those of the 20th Class, with the exceptions that the valveless type FSA8 mechanical lubricators on the later

(*Continued on page* 12)



Footplate fittings in cab of 20A Class Beyer-Garratt for Rhodesia



LORRY—BUS—COACH

Modified Renationalisation Proposal

IN the January issue of *Road Way*, the R.H.A. journal, Mr. Ernest Davies, M.P., chairman of the Parliamentary Labour Party Transport Group, states his personal views on the course which re-nationalisation of road haulage might take. In recent months, he says, there has been a strengthening of the view in the Party in favour of more comprehensive re-nationalisation because of the further deterioration in the financial position of the B.T.C., which confirms the Socialist view that the 1947 policy of transport monopoly is still the only answer. He then, however, propounds his own plan for some haulage to come under B.R.S. control as opposed to ownership. He does not think B.R.S. would again want to be landed with a whole miscellany of vehicles and businesses which it would have to consolidate and which might be surplus to its requirements. Instead, it should have power to acquire by negotiation or ultimately by compulsion if necessary those businesses it considered necessary to the efficient operation of its national network of trunk services and general haulage.

For the rest there could be a permit system as before, but he was never happy about that, or there could be extensive subcontracting. In other words, B.R.S. would become a road haulage authority; all long-distance traffics would have to be offered to it and what it did not wish to carry out itself it would subcontract to private hauliers as its agents. This would have to be done at predetermined agreed rates. Earlier (said Mr. Davies) he had thought that a continuation of competition between public and private long-distance haulage might be considered, but he now doubted its feasibility. The alternatives as he now saw them were total acquisition or the continuation of private haulage operating as an adjunct to B.R.S. He emphasised that this was merely thinking out loud and a consideration of the possibilities.

Clydeside Bridge Rebuilt

THANKS to the reconstruction by British Railways of its overbridge near Langbank, the Western S.M.T. Co., Limited, is able to run double-deck buses on its important Glasgow—Greenock and Gourock route which commences from St. Enoch Square. Service frequency has been reduced while increasing the number of seats available.

Wage Demand for 74-Seaters

WITH 35 Leyland Titan 74-seat buses ready for operation on March 31 next (see illustration in November 29, 1958, issue) Coras Iompair Eireann has run into labour difficulties in respect of these and other double-deck buses. The Labour Court heard the wage dispute on December 30 and is to make its recommendations. The Workers' Union of Ireland had put in a claim for a differential of 3s. 6d. a turn of duty for crews operating the 74-seat buses and the I.T.G.W.U. lodged a claim for an increase of 25s. a week for these crews.

This claim was subsequently adopted or supported by the W.U.I. and the National Association of Transport Employees. C.I.E. considered that claims of 25s. a week and 3s. 6d. a day were excessive, and that a differential between 1s. and 1s. 6d. a day should be paid to the men operating these buses. One of the unions had suggested that this be increased to 2s. Finally, the company offered 1s. 9d. per turn of duty. The I.T.G.W.U. then asked for a review of the position of crews operating 66-, 68- and 74-seat buses.

For C.I.E. Mr. Leo Redmond submitted that it had a legal right to increase the size of its buses, but this was not the case in Britain until about twelve months ago. Under the company's programme 352 buses of 74-seat capacity would be put into service in Dublin. The union side stressed that rates of wages paid to bus crews in Dublin were based on 56-seat buses, but that over a period of years the company had increased the seating up to 66, without any corresponding upward adjustment in wages. The men had rejected the offer of 1s. 9d. because they had not been compensated already for extra work involved in working 66- and 68-seat buses; also the proposed additional payment of 11d. to each crew member for any turn of duty in 74-seaters of less than four hours was unreal and inadequate. The proposed additional payment of 1s. 9d. for over four hours was regarded as wholly inadequate.

Highways and byways overseas: an Albion Reiver six-wheeler with a load of ensilage crossing a flooded bridge on a citrus estate in Southern Rhodesia; right, Leyland Super Hippo and bogie hauling the main beams of an overhead crane, weighing 100 tons, on a Brazilian highway. The load was 100 ft. long overall

Fares Application Refused

THE Northern area Traffic Commissioners have rejected an application by United Automobile Services, Limited, to increase certain fares. The chairman, Mr. J. A. T. Hanlon, said that United was in a strong financial position and could easily bear its increased costs for some months at least. He contended that the application was premature by at least six months. Mr. S. Gibbon, on behalf of the company, said that the last wage award to busmen would cost £120,000 a year while the proposed fare increases would bring in £40,000. Of the 47,500 single fares in operation, only 9,560 would be affected by the increase. Mr. B. T. Pratt, secretary, admitted that the estimated profit for this year was the highest for 10 years and would be £104,000 more than 1957. The proposed fare alterations were: single fares of 1½d. and 2d. to be unchanged; 2½d. to 5d. fares to be increased by not more than a halfpenny; 6d. to 2s. fares not more than 1d.; 2s. 1d. fares and over, not more than 2d. Return fares: 1s. 4d. to 2s. 5d., up by 2d.; 2s. 6d. to 3s. 5d., up by 3d.; 3s. 6d. and over, up by 4d.

New Lost Property Regulations

REVISED p.s.v. lost property regulations made by the Minister of Transport and which came into force on January 6 authorise bus and coach operators to increase from 3d. to 1s. their basic charge to claimants of lost property. Also increased, from £2 to £4, is the maximum award payable to conductors for lost property which they hand in. The increase is the first since 1934. It is common knowledge that for many years lost property departments have been run by the operators at a heavy loss. The new regulations will help them to cover expenses and reduce the amount by which their lost property offices have to be supported out of revenue from fares. Besides the basic charge, claimants of articles worth over 2s. will continue to pay one-twelfth of the value of the article which is passed on to the conductor as a reward. The increased maximum of £4 will thus only affect articles worth over £24. The new regulations do not apply to London Transport vehicles which, together with its trains, are covered by separate regulations (staff do not receive any individual reward). The new Public Service Vehicles (Lost Property) (Amendment) Regulations, 1958 (S.I. 1958, No. 2262), cost 3d.

West Drayton Bus Services

CONSENT has been given by London Transport for Sunday bus services to be operated by independent vehicles over two sections of local routes between West Drayton Station and Mill Road and Stockley Estate. The first-named section lost its Sunday service, on route 224A from Uxbridge, in November; Stockley Estate, served by route 224B, also from Uxbridge, has never had a Sunday service: Yiewsley and West Drayton U.D.C. sponsored the negotiations for the new facilities. London Transport refused to allow independent operators to augment the weekday services by running jointly with its own buses.

Worthwhile Saving in Express Services

A FIFTH limited stop service was introduced by Liverpool Corporation Passenger Transport Department on January 5. The new service, which runs every twenty minutes, supplements existing services between Garston and City and operates at peak hours and on Saturday afternoons. Liverpool Transport has found that the reduction in stops on these services has reduced operating costs by about 2½d. per mile.

Tribunal Again Criticises Evidence

EVIDENCE adduced on behalf of J. Stamper and Co. (Haulage), Limited, of Penrith, in support of an application for an A-licence in respect of five vehicles with an aggregate unladen weight of 26 tons in substitution for five vehicles totalling 16¼ tons on special A-licences was, "using charitable language, wholly unsatisfactory" and certain figures were "literally incredible" says a Transport Tribunal judgment. The Tribunal upheld the licensing authority's refusal of the application. The applicant stated that the vehicles were fully employed and that the additional tonnage was necessary solely for more sturdy vehicles of no greater carrying capacity.

The Tribunal criticises the signature, without explanation, of tonnage or receipts figures by chartered accountants—"what the person who signed them meant to convey by signing them did not appear." It is these figures which, inter alia, purported to show that a 5¼-ton vehicle earned £17,762 in the year ended May 1, 1956, that the Tribunal terms "literally incredible." It was suggested that included inadvertently were figures in relation to vehicles owned personally by a director, Mr. J. Stamper. Against this (comments the Tribunal) Mr. Stamper twice committed himself to the statement that the vehicles indicated in the exhibits were the company vehicles. The claim that the fleet was fully employed was unsupported, the Tribunal found.

Bus and Coach Developments

United Counties Omnibus Co., Limited, proposes a limited stop service between Luton and Bedford.

Astill and Jordan, Batby, applies for the licences of B. J. Mellor, Limited, Enderby, which include a Ratby—Anstey service.

Maurice E. Snell, Limited, Colerne, applies for the licences of United Corsham Traders, Limited. These are mainly service leave services.

With the introduction of the 1959 summer schedules London Transport Country buses at present operated from Watford High Street garage will be transferred to Garston garage.

Provincial Garage (Leicester), Limited, seeks the Fleckney—Leicester service and excursions and tours from Fleckney of F. W. Bromley.

Corona Coaches, Limited, and H. S. Theobald and Son propose that weekly tickets between Holloway's Factory, Glemsford, and points thence to Sudbury should be available on the services of either.

The operations of Wells Motor Services, Limited, Biddulph, are being divided between the North Western and Potteries companies. In some cases the replacement services will be jointly operated.

With the withdrawal of its Dublin suburban train service between Harcourt Street and Bray on December 31, Coras Iompair Eireann introduced a new bus service—86—on the following day between D'Olier Street and Bray Station via Ranelagh, Milltown, Dundrum, Upper Kilmacud Road, Leopardstown Road, Cabinteely, Loughlinstown and Shankill.

WORK STUDY IN TRANSPORT

Creating an Attitude of Mind

By D. McKENNA, M.Inst.T., Assistant General Manager, Southern Region, British Railways*

VERY broadly speaking, work study is just what its name implies; it is the study of work. We are all of us accustomed to performing work. But a great many people perform their work without first convincing themselves that what they are doing is absolutely necessary to the success of their undertaking, or that the way in which they are performing their work is necessarily the best way. That is not their responsibility. But it is the responsibility of management to see that those questions are both asked and satisfactorily answered.

In the broad sense therefore no one will quarrel with this idea of work study. It has been described as "the initial examination of any work with the objective of making the most economical and effective use of men, materials, equipment and buildings." I suggest that we should regard it as the application of certain techniques of analysis and measurement to the processes of work, with a view to their performance to the greatest possible advantage. The technique of work study has its component parts; the most important are method study, time study and motion study.

Analysis and Improvements

The objective in all these is the same, to analyse down to the last detail what actually happens in the course of any overall operation, and to measure quantitatively the time taken for each bit of the operation, so that we know and can record all the elements of the process. Then we start questioning: why do we do each element at all? is the order of performance the best? could any of the elements be done quicker? could two of the elements be performed simultaneously instead of successively? would the provision of a simple piece of apparatus or a change in the position of the operator be a help? and so on. Almost invariably, as a result of this kind of analysis, some improvement can be found. Furthermore the right time for carrying out the operation can readily be established.

There is nothing particularly new in this kind of analytical approach, or in the use of the stopwatch to assist in determining the right time to do a job; for many years there have been efficiency experts who have employed just those techniques. But in the earlier days the results were not always welcomed, as the methods of the experts and the results expected by them seemed in certain cases to take little account of the feelings and aspirations of the workers as human beings.

The Human Side

In modern work study, however, the human side is just as much the subject of study and is considered to be even more important than the pure mechanics of the job. Proper allowance is made for the necessary relaxation in the course of physical exertion, and for the environment in which work is undertaken; the study, in fact, is complete. Great attention is paid also to the initial approach to the staff before any work study investigation is started. Because it is a study of human activity, the human side—the psychological side—must never be neglected. Every effort must be made to breed confidence in schemes by making details of work study investigations available to shop stewards, by clearing queries with them as they arise, and by allowing them access to all documentation connected with the scheme.

Work study is a means of obtaining greater output. That greater output is not necessarily obtained because men work harder, but because they are working more consistently and efficiently. A work study investigation may easily show that for a surprisingly large proportion of the day a man may not be working effectively at all—he may be awaiting the delivery of material or walking around to fetch a tool because it does not happen to be handy. While he is working he may be working very hard. Work study aims at cutting out the waste and enabling the men to work steadily and consistently.

Bonus Schemes

And if this greater productivity is obtained, it is not an unreasonable principle that the men who directly contribute to it should have some share of the financial benefits which result. It is following that principle that so often an incentive bonus scheme is linked with a work study investigation and subsequent reorganisation. It is a particularly good basis for a bonus scheme, since the work done can be measured quantitatively and improvement in output becomes a matter of objective calculation, and not subjective assessment. But it remains the primary object of work study to get the job right. The bonus payment system may be added on top. Any system of bonus or incentive payment should properly be based on the best method and the time required for the work. In this way bonus may be earned—but not given.

On the face of it, transport may appear to be a relatively unpromising field for work study. If a load is to be carried from one point to another, and if it is carried in a lorry, safely, and as speedily as the law will allow, is there room for work study of that particular problem, and much chance of greater efficiency? Of course the consignment might, with advantage, have gone by rail, but we will assume that the transport manager has already explored the pros and cons of alternative means. Maybe the chances of a substantial improvement in efficiency in that particular task may not appear high, but work study may show, for example, that it is possible and economical to palletise the stores which make up the consignment—then the loading and unloading will be speeded up, the number of men employed on this task reduced and the possibility of damage to the goods through a multiplicity of handling will be considerably reduced; and the vehicle will be released more quickly for another revenue-earning journey.

Transport Examples

There was a good instance at an army ammunition depot. Over a series of trials, it took eight men 95 min. to load and 91 min. to unload 126 packages, weighing a total of 5¼ tons, into and out of a 10-ton covered rail wagon. The same load was loaded by three men using a fork-lift truck and a pallet transporter in 61 minutes, and unloaded in 59 minutes; a saving of approximately 35 per cent in time and a 250 per cent reduction in labour costs.

Really worthwhile improvements in efficiency may also be obtained on the part of the fitter who maintains the lorry, as a result of applying work study techniques. For example, in one well-known undertaking the inspection routine for a fleet of articulated tankers was made the subject of method study. A flow process chart was constructed to show exactly what the fitter did. As a result of critical examination of this chart a new routine was introduced. The distance walked by the fitter during the monthly inspection was reduced by 60 per cent and his working time by 34 per cent.

In 1947, work study was applied, with the aid of industrial consultants, to a shop which produced precast concrete articles in the Southern chief civil engineer's department at Exmouth Junction. The conditions were favourable; it was a straight production job; the staff were self-contained; and the work was unlike other work on the railway so that there was no fear of repercussions—a fear which often has an inhibiting effect upon change. An incentive scheme was introduced with the reorganisation of the work, and the scientific measurement of the work, following work study, enabled a much better control of the labour to be achieved. The scheme was a great success. Within a few weeks output had risen by 39 per cent; and after a little over a year by 90 per cent.

Training Staff

After that start began the training of railway staff in the technique of work study, and it was then applied to the other production shops of the chief civil engineer's department with similar advantages. But the greater part of the work of that department was concerned with maintenance rather than production. In 1951 the possibility of applying work study techniques to permanent way maintenance was first investigated. If the technique could be successfully applied in these much more difficult circumstances, then it was probable that it could be applied quite successfully to almost any engineering maintenance. The investigation, which again was carried out with the aid of industrial consultants, was sufficiently promising for a pilot scheme to be introduced a little later.

Meanwhile, further technical staff were being trained in work study. From small beginnings the application to permanent way maintenance was gradually extended to an even wider area. Experience showed that the standard of maintenance under work study was actually higher; labour control was better; and the whole process of organisation, including the distribution of materials to the site, was tightened up. An incentive bonus scheme was introduced with the work study scheme, and after taking into account the additional cost of the bonus payments and the cost of administering the scheme, a saving of the order of 13 per cent was achieved.

Following the example of permanent way maintenance, work study techniques were applied to other maintenance jobs such as steel bridge repairs and station painting. By the end of 1958 no less than 50 per cent of the outdoor staff of the chief civil engineer's department were working under work study conditions, and it is expected that the whole of this staff will be covered during 1959.

A Lengthy Process

It is worth noting, first, that the development described was all in one department; the significance of this is that it is a pre-requisite for successful development that the boss should believe in it. Secondly, a relatively easy field was selected for the initial application; that meant that work study got off to a good start and so acquired a good name. Later on, much more difficult applications were attempted, and in the end successfully achieved, but by then work study had already some successes to its name. Thirdly, the application of work study in this one department has taken quite a long time—over 10 years in fact. Short cuts could be very dangerous. On the technical side there is a tremendous amount of detailed investigation work and measurement to be undertaken. A lot of staff must be trained in the technique and must have had considerable experience before they can be called fully qualified practitioners. And the psychological side must be handled with patience and care. The early stages are bound to be slow.

In transport operation, the field for application of work study may appear to be more limited. Many jobs require a man to be in attendance at a particular spot all the time, but only to be doing work intermittently. A signalman on a not very busy line, or an inquiry clerk behind a counter are examples. But even if the accustomed work study techniques seem unlikely to offer any practical result, yet it may well be profitable to bring to bear what may be called the "work study attitude of mind" to the job. The first question should be: could we perform the work by mechanical means at less cost or from some other signalbox? or, in the case of the inquiry clerk, could not most of the questions which he is asked be answered by the exhibition of a simple poster? We may not at first know what the questions are, but at least we should take the trouble to find out. That is the work study approach.

Buildings

There is one field where the application of work study methods are of the greatest importance, and that is in the design of installations such as depots for operation or maintenance. In common with industry many of our shops and depots have just grown. Few are organised to meet modern conditions. So we are constantly faced with the problem of building, rebuilding or adapting. Most of us no doubt think that we do take proper care in preparing and examining such designs, as large sums of money are usually involved. But do we carry the examination and analysis of the design far enough? How often do we find that after the depot is built some alteration becomes desirable, simply because the working was not thought out in sufficient detail beforehand?

If a trained work study man is put on to examine the plans the results may be quite surprising. There is a celebrated example where a work study investigation at an airport handling passenger and freight enabled the cost of a £½ million project to be reduced to £140,000. And that is by no means a freak result. It is well worth while taking an immense amount of trouble in the design stage. As they say, India rubber is easier and cheaper to use than a pneumatic drill.

* Abstract of paper read before the Metropolitan Section of the Institute of Transport.

NATIONAL BOAT SHOW

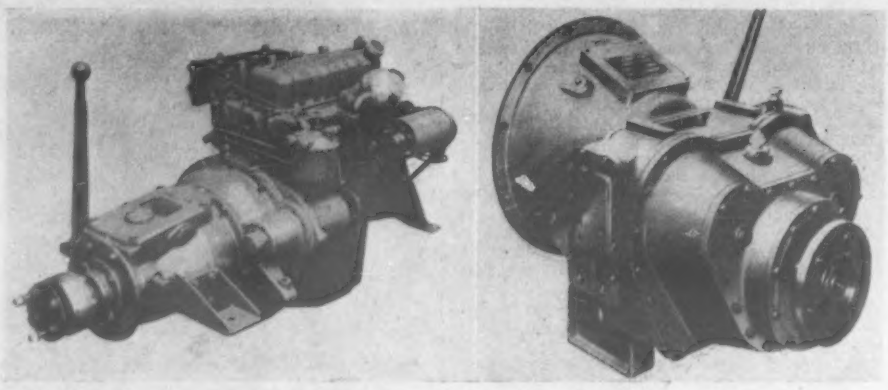
Advance of Resin-Glass Construction

A RECORD number of exhibitors at the fifth National Boat Show, which is due to end its 11-day run at the Empire Hall, Olympia, on January 10, appeared set fair to attract a record number of visitors judging by attendances on the two occasions when we visited it ourselves. There is no doubt of the enthusiasm with which the present series of exhibitions, organised by the Ship and Boat Builders National Federation and sponsored by the "Daily Express," has been received by the public, but the Boat Show does more than reflect the growing habit of boating for pleasure; it provides an opportunity of seeing under one roof a complete cross-section of the products of the boat-building and light marine engineering industries and a spur to competition in progress among the exhibitors themselves.

Apart from the craft designed purely for private and pleasure purposes, there are a number of interesting working craft on show and several standard hulls designed for fitting out for either private or commercial roles. The practice of developing standard hull forms for various purposes has been particularly adopted for the larger sizes of reinforced plastics hulls and items of this type are shown on Watercraft, Thornycroft and Halmatic stands. With plastics construction the practice is particularly beneficial since the cost of producing the moulds, which forms a high proportion of the total cost, is spread over a greater number of hulls.

Large Moulded Hulls

The craft exhibited by Halmatic, Limited, is believed to be the largest single polyester-glass moulding in the world. It has moulded-in fuel tanks and engine foundations and forms one of a range of standard Deborine hulls in production by the company; it has overall length of 56 ft., moulded beam of 15 ft. 2 in., draft aft over the skeg of 3 ft. 9 in. and a displacement of 23 tons. The vessel has been fitted out to the order of Mercedes-Benz (Great Britain), Limited, by James Taylor (Shipbuilders), Limited, and is powered by two Mercedes-Benz 160-b.h.p. diesel engines. A similar hull is fitted out by Camper and Nicholson, Limited, as a yacht for Far Eastern waters.



Perhaps the smallest inboard diesel for its power in the world, the new Perkins 33-s.h.p. (cont.) Four 99 with Parsons D-type gearbox; right, the new Self-Changing Gears MF clutch which comprises an over-centre plate clutch and fixed reduction gear with a range of optional ratios

It is imperative that these large mouldings be produced under extremely closely controlled conditions and the necessary facilities are also a feature of the yard of John I. Thornycroft and Co., Limited, which is showing one of its range of standard reinforced plastics hulls now available to other boat builders or customers for their own completion and fitting out. The unit exhibited is 28 ft. 6 in. long and has a beam of 8 ft. 9 in.; other standard sizes in the range are 16 ft. by 5 ft. 10 in. and 24 ft. by 7 ft. 6 in. and all are moulded in one piece and can be impregnated with one or more of a range of colour pigments. Standard moulded-in fittings include a gunwale flange which also forms a deck landing; transverse floors to which engine bearers can be bracketed; various formers, stringers and stiffeners; and chocks for stern tube, rudder beam and bearing and skin fittings. Numerous additional items are offered and the stand carries examples of Thornycroft marine diesel engines with power outputs from 12½ to 125 b.h.p. and various propellers.

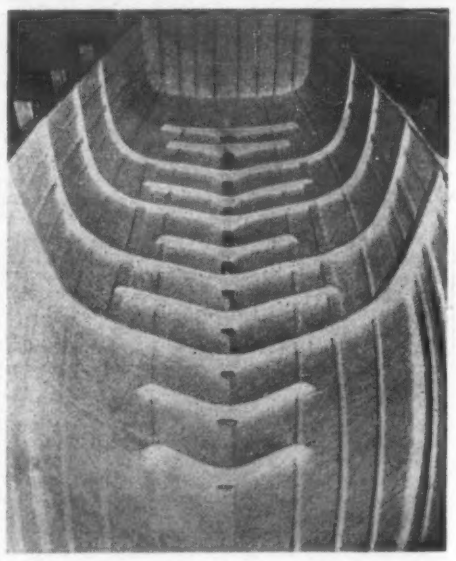
Moulded plastics craft are also shown by W. and J. Tod, Limited, and Watercraft, Limited, the latter company illustrating its standard range of lifeboats of 16 ft. to 36 ft. length, 500 of which are now in service throughout the world. An example of plastics construction in the Netherlands is exhibited by Amsterdam Shipyard, Limited, in the form of a 26 ft. 3 in. by 8 ft. 9 in. motor cruiser, while Duraglas reinforcing materials specially developed for marine construction are shown by Turner Brothers Asbestos Co., Limited.

An important technical development in more traditional materials is illustrated on the stand of Thames Plywood Manufacturers, Limited, which shows a new type of marine plywood. This is a flat sheet material with diagonal grain from which round-bilge boats can be built and which can be expected to bring about a revolution in the construction of small boats. Opportunity of examining and discussing the application of corrosion-resistant aluminium alloys in marine construction is afforded on the stand of Birmabright, Limited.

Machinery

In marine propulsion machinery the march of the all-conquering automotive-type diesel engine continues and examples of units developed initially for road transport by Albion, Bedford, B.M.C., Commer, Foden, Ford, Leyland, Perkins and Thornycroft are to be seen on various stands and in many craft. The new Perkins Four 99 1.6-litre unit developed for marine use is arousing considerable interest on the manufacturer's stand and promises to become as popular as the larger P, L and S series engines with which it is shown. Believed to be the smallest four-stroke inboard marine engine of its power in the world, the Four 99(M) develops 33 s.h.p. (continuous) at 3,000 r.p.m. and has an intermittent rating of 40 s.h.p. at 3,600 r.p.m. With direct-drive gearbox it weighs only 495 lb. (224.5 kg.).

Interest in the two-stroke diesels of Fodens, Limited, of which examples of the uprated Mark III units are shown, is also apparent. Certainly the compact physical dimensions of all three engines is impressive. The FD4 rated at up to 90 h.p. is seen with a Self-Changing MRF8 oil-operated gearbox, while both the FD6 (up to 135 h.p.) and the FD12 (up to 270 h.p.) are shown with Thornycroft hydraulic gearboxes. A new engine shown by Ajax Marine Engines, Limited, which handles Leyland and Albion marine diesel engines, is a turbocharged example of the Argosy (marine version of the O900). Capable of an output of 275 b.h.p. at



Interior view looking aft of the Thornycroft 28 ft. 6 in. Polywog reinforced plastics hull

1,800 r.p.m., this is one of the most powerful engines at the show and it is coupled on the stand to a new Ajax reverse-reduction gearbox. A Bedford 300 cu. in (5-litre) diesel in marine trim (80 s.h.p. at 2,600 r.p.m.) is on view for the first time on the stand of R.J.C. Motors and Marine Engines, Limited, General Motors concessionaire in this country for G.M.C. two-stroke diesels, examples of which are also exhibited.

Self-Changing Gears, Limited, has a new item included in its range of marine power transmission and control equipment. This is the MF clutch-reduction gear unit comprising an over-centre single- or double-plate clutch and reduction gearing. There is a range of gear ratios from 1.5 to 1 to 6 to 1 available as well as right- or left-hand rotation of the output shaft. The unit is designed for use in vessels fitted with variable-pitch reversing propellers. A useful coupling box shown by the same company is a compact unit permitting the coupling of two engines to a common output shaft to provide maximum power (two engines) or maximum economy (one engine) operation.

Jet Propulsion

Rowhedge Ironworks Co., Limited, illustrates two examples of the Gill hydraulic jet propulsion unit which it manufactures under licence from the British patentee. The Gill system of propulsion incorporates steering and is contained entirely inside the hull; it eliminates the need for the propeller, rudder and reversing gears and is particularly suitable for small to medium craft operating in shallow waters. The jet propulsion unit provides direct sideways as well as ahead and astern movement and it has a useful application even in large vessels as an auxiliary steering aid in confined waters or when berthing.

Among the other particularly interesting items noted during our visits to the exhibition were the Bramber Engineering Company boat trailers with Flexitor independent rubber suspension units; power-assisted marine steering gears by Bishop Transmission Company; literature and display material by British Waterways designed to encourage pleasure boating on inland waterways; a new polyester resin Cerrux paint by Cellon, Limited; tube-type liferafts for from four to 23 persons by Dunlop Rubber Company; the magnificently equipped Gardner-engined R.N.L.I. lifeboat *Alfred and Patience Gottwald*; and marine speedometers and a new general-purpose range of waterproof K.L.G. plugs by S. Smith and Sons.

The Dunlop stand also carries a new product that many boat owners have been seeking for a long time. This is a new waterproof coating for decks, Semtex Elasdec. Based on a blend of chemical resins and applied as a fluid by brush, Elasdec is said to adhere firmly to a properly prepared timber base, drying out to a tear-resistant skin about 1/16 in. thick with the feel and appearance of thin rubber sheet and that will not deteriorate with age or under the effects of ordinary paint, solvents, lubricating oil or salt water.

Joseph Lucas, Limited, makes a show of the "something old—something new" theme, the old being one of the original Lucas Tom Bowling patent ship's globe lamps—a type developed and manufactured by the Tom Bowling Lamp Works well before it was incorporated in the founding in 1887 of the present Lucas organisation. The new is represented by one of the latest Lucas products, the RMS roof-mounting spot lamp which can be operated from inside the cabin or wheelhouse.

TRANSPORT IN THE CAPITALS

PASSENGER SERVICES IN MOSCOW

2—Metro*

MOSCOW is in the fortunate position of having electrified its suburban railways, though this process (begun in 1929) was not completed until two or three years ago. The lines are equipped on the overhead d.c. system, partly at 1,500 volts and partly at 3,000. The trains consist of six or nine cars, each seating 108 persons on wooden seats disposed three on either side of the centre gangway, thanks to the wide Russian loading gauge. Most trains run into the nine terminal stations about 1½ miles from the city centre, but some use a connecting line between the Kursk Station and the lines to the western suburbs. The suburban trains have a particularly important role to play in Moscow's transport, for the housing shortage is such that many people travel in daiiy by electric train from up to 50 miles out.

TABLE OF METRO OPENING DATES

Kirovskaya Line (10.8 km.)

May 15, 1935	Sokolniki—Park Kulturi
May 1, 1957	Park Kulturi—Sportivnaya

Pokrovskaya Line (13.5 km.)

May 15, 1935	Okhotny Ryad—Smolenskaya (old line)
March 20, 1937	Smolenskaya—Kievskaya (old line)
March 13, 1938	Pl. Revolutsi—Kurskaya
January 18, 1944	Kurskaya—Ismailovskaya
April, 1953	Pl. Revolutsi—Kievskaya (new line)
November, 1954	Ismailovskaya—Pervomaiskaya

Gorshogo Line (14.8 km.)

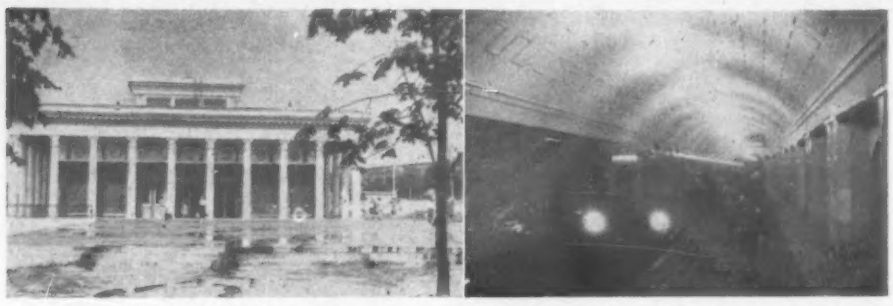
September 11, 1938	Sokol—Pl. Sverdlova
January 1, 1943	Pl. Sverdlova—Avtozavodskaya

Koltsevaya Line (Circle) (19.3 km.)

January 1, 1950	Park Kulturi—Kurskaya
January 31, 1952	Kurskaya—Byelorusskaya
March 13, 1954	Byelorusskaya—Park Kulturi

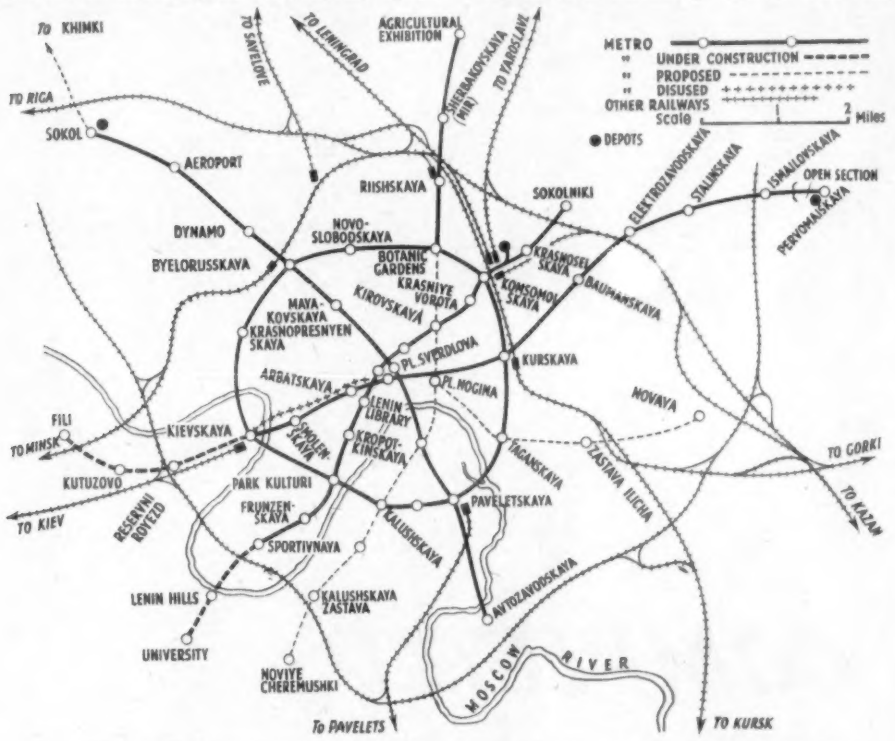
Riga Line (originally known as "Exhibition" Line) (5.4 km.)

May 1, 1958	Botanic Gardens—Agricultural Exhibition



Dynamo Stadium Station and, right, postwar Moscow Metro stock at Okhotny Ryad Station

The Metro is excellently laid out with wide, straight platforms to take eight-car trains, and with stations well spaced apart. The long interval between stations allows excellent overall journey times, such as 22 min. for Kievskaya—Pervomaiskaya (13.5 km.) and 30 min. for the entire Circle. Trains are usually composed of six cars and run at 3-min. intervals, reduced to 105 sec. at peak hours. Current collection is by side third rail at 750 volts d.c. There is a flat fare of 50 kopeks; tickets are purchased at booking offices or from machines and cancelled at the entry barrier as in Paris, exit being by turnstile. The most exuberant station decoration is found on the 1950-54 extensions, and later construction has reverted to the more austere forms favoured on the original line of 1935.



Layout of the Moscow Metro underground system; a diagram in our December 27 issue related the underground stations to tram, trolleybus and bus routes

Growth of the Metro

There are now five Metro lines, almost all in deep-level tube. Finance for new construction does not seem to present any difficulty, for a skilled team is constantly at work building new lines at the rate of about 3 kilometres per year; as soon as one is finished, they start on the next. The table reproduced traces the growth of the system. The older part of the Kirovskaya Line is partly cut-and-cover and the approach to Pervomaiskaya Station is above ground. This is the only surface section of the Metro, as the original line to Kievskaya (which included a bridge over the Moscow River) was replaced in 1953 by a new deep-level tube. The reason for this costly diversion is not known. Sections now under construction are Sportivnaya—University and Kievskaya—Fili, with lines to Khimki, Novaya and Noviye Cheremushki to follow later. The lines are distinguished by separate map colours as in London. Further extensions are in the planning stage, including four on the surface.

The different types of Metro car are designated by letters, and are allocated to specific lines. The Pokrovskaya Line is worked by B-stock (1938), the Gorskogo Line by D-stock (1950-54), the Circle by G-stock (1947-48) and the Kirovskaya Line by the original A-stock of 1935, assisted by the newest cars of 1956-57 and a few cars (type V) obtained as reparations from the Berlin U-Bahn. Types A and B are in two-car motor-trailer sets; the other stock is motored throughout. Livery is two shades of blue, except for the Berlin trains, which are finished in grey and cream.

A trolleybus and bus on the impressively wide Gorki Street in Moscow

* Previous section appeared December 27, 1958.

We regret to record the death, at the age of 82, of Dr. Hans Sulzer, who had been president since 1935 of the famous Swiss engineering enterprise bearing that name.

Mr. William Wallace, who has been chairman of Chrysler Motors, Limited, and of Dodge Brothers (Britain), Limited, since 1956, retired with effect from January 1. He joined the parent Chrysler Corporation in the United States in 1933, but returned to Britain as sales manager of the Chrysler—Dodge subsidiary here. Elected to the board in 1934, he was made managing director in 1945.

NEWS FROM ALL QUARTERS

St. Enoch Ticket Machines

At St. Enoch Station, Glasgow, the first installation of five electrically operated Garrard Multi-printer ticket printing and issuing machines in Scotland has been introduced, replacing the manual issue of tickets from racks.

News of Railbuses

The diesel railbuses which replaced steam trains on the L.M.R. Northampton—Bedford—Hitchin line on September 15 have attracted much more custom. During October nearly 7,000 passengers used the services—more than twice the number carried in the corresponding month last year.

New Zealand Vehicle Assembly

The number of motor vehicles assembled in New Zealand reached a record level in the 1957-58 production year. It included 6,318 commercial vehicles, other than tractors, but the previous year the number assembled included 7,411 commercial vehicles and in 1955-56 9,204 commercial vehicles.

Diesel Trains for Dundee Area

Twin-car diesel trains replaced steam trains on Scottish Region local services between Dundee and Arbroath and a new through service was introduced between Arbroath and Perth via Dundee from January 5. From the same date Dundee East passenger station was closed and Dundee West will be used only by the express trains to and from Glasgow.

Basic Bus Map for Central London

A new type of folder bus map, concentrating on 15 basic key routes which cover inner London, has been published by London Transport. It is intended specially for visitors. It shows 72 places of interest and a limited number of main routes which have been specially chosen to provide a simple network for sightseeing. Each route is given a separate colour indication, translated into route numbers in a key. The map does not show Underground routes, for which there is a separate folder.

More Details of Aldgate Road Scheme

Approval has been given by the City of London Common Council to plans for redeveloping an area of 7½ acres on the north side of Aldgate and Aldgate High Street, the first-named thoroughfare to be widened. It is proposed to proceed by June 30 next year and to complete most of the scheme by 1964, but the long-term road programme will not be completed until some years after that. All the property on the north side of Aldgate between Leadenhall Street and Middlesex Street (the booking hall of Aldgate Metropolitan Station is set back) is likely to be demolished, except St. Botolph Church. A new west-to-east road between Dukes Place and Middlesex Street will form the north side of a large gyratory traffic system, Aldgate High Street being reserved for east-to-west traffic. Both Houndsditch and the new route 11 road, from London Wall and Bishopsgate, would debouch into this roundabout. From Bishopsgate route 11 will follow the course of Camomile Street, Bevis Marks and Dukes Place.

Sheffield–York Diesel Trains

Diesel multiple-unit trains have operated the local passenger service between Sheffield Midland and intermediate stations to York from January 5.

Pennsylvania–New York Central Merger

It is stated that the necessary studies for a merger between the Pennsylvania Railroad and the New York Central System have now been reduced to financial matters, all other phases of inquiry having been completed.

Increase in French Railway Fares

French Railways fares were increased and a new conventional rate of exchange based on the recent re-valuation of the French franc has been applied to tickets sold in sterling in this country from January 1. The second-class basic rate went up from 6.80 francs to 8 francs and the first-class rate from 10.50 franc to 12 francs per kilometre.

Another London Parking Scheme

A fourth meter-parking scheme has been prepared for part of the Central London area. Holborn Borough Council proposes 770 meters in an area east of Tottenham Court Road and north of New Oxford Street. A second Westminster City Council scheme, embracing the remainder of Mayfair west of Regent Street, and a Marylebone Borough Council scheme for streets north of Oxford Street, are at present being considered.

Smithfield Labour Examination

A detailed examination of labour and other problems at Smithfield Meat Market is to be made by a special committee set up on December 31. Among those represented on it are wholesalers, retail butchers and the Transport and General Workers' Union. The decision to form the committee was taken after the report of the inquiry by the Ministry of Labour into meat handling at Smithfield.

German Train Speeds

The German Federal Railway has decided to bring the average speed of several of its long-distance expresses to more than 62 m.p.h., starting from the summer of 1959. Although some long-distance services will be cut, they will be compensated for by the expansion of other linking services. Electrification schemes in the south and west of the Federal Republic and the building up of the diesel locomotive fleet will also permit an overall cutting of running times. The fastest trains in the country will be the T.E.E. *Helvetia* train and the *Rheingold Express*, both of them with average speeds of more than 62 m.p.h. and speeds over suitable sections of about 87 m.p.h. Five services have authorised maximum speeds of 87 m.p.h., while 100 m.p.h. is shortly to be reached on the Holland—Basle route, on either bank of the Rhine, Vienna—Frankfurt—Brussels and Rhineland—Hamburg via Münster and Hanover, and also on the Munich—Augsburg—Ulm route. Equally high speeds are to be attained on the Würzburg—Fulda—Hanover line when electrified.

COMMERCIAL AVIATION

Viscounts for Pakistan

FAIREY ROTODYNE RECORD

THE first of a fleet of Vickers-Armstrongs Viscount 810 series, ordered by Pakistan International Airlines, was formally handed over on January 2. The aircraft (AP-AJC) a Viscount 815, is the first of three ordered by P.I.A. in 1956. It was also announced that the airline has ordered a further two Viscounts of the same type. Completion of the fifth aircraft is contracted for October, 1959. Total Viscount orders now stand at 404, Trans-Australia Airlines having also ordered two more. The handover ceremony took place at Wisley Aerodrome, Surrey, when Mr. M. Ikramullah, Pakistan High Commissioner in London, accepted the aircraft's papers, on behalf of Pakistan International Airlines, from Mr. T. Gammon, deputy managing director of Vickers-Armstrongs (Aircraft), Limited. Afterwards Begum Ikramullah cut a tape in front of the forward passenger door of the aircraft and the airline's guests inspected the new machine. In the 815s, 53 passengers are carried in a mixed class configuration. Fifteen first-class passengers are carried in the rear portion of the main cabin, 30 tourist class in the forward portion and eight in a separate forward cabin. The ratio of first-class to tourist passengers may be altered by changing the position of the furnishing bulkhead. One toilet is located on each side of the central aisle in the plane of the propeller discs. The galley is situated aft of the passenger cabin. Comprehensive radio aids are fitted including VHF, HF, and ADF equipment. Full provision is made for fitting weather radar.

B.O.A.C. to Serve Shannon

The advance summer timetables of the British Overseas Airways Corporation show a resumption of operations via Shannon with Britannias on the London—Chicago service calling there twice or thrice a week from May 7.

France without Passports

Air Charter is introducing day excursion facilities from Southend to Calais wherein passengers will not need passports but, as on certain sea trips, will require only identity cards. In March Silver City is introducing a similar facility between Lydd (Ferryfield) and Le Touquet.

Rotodyne Record

Only three days after British European Airways had announced that, subject to certain requirements being met, it was ready to order six Fairey Rotodynes, with a possible need for a further 14, the prototype aircraft flown by Sqdn.-Ldr. R. Gellatly and Lieut.-Cdr. J. Morton established a record of 190.9 m.p.h. for a 100-km. closed circuit by a convertiplane.

B.O.A.C. Fare for Canadian Servicemen

A special return fare—30 per cent below the normal economy class fare—has been introduced by B.O.A.C. for Canadian Servicemen personnel stationed in the United Kingdom, Europe and the Middle East. The facility is available to members of the Canadian Forces who intend travelling at their own expense on leave or other authorised absence from duty, but not to their families. Tickets are valid for 45 days and the facility will remain in operation until May 31.

Blackpool—Dublin Service

The first direct service between Blackpool and Dublin is to be inaugurated in the spring by the Northern Division of Silver City Airways. The service will operate on Fridays, Saturdays and Sundays, starting with one flight a day and increasing as traffic grows. Flight time for the 143 miles between the two airports will be 58 minutes and the aircraft used, 36-seat Douglas DC3s and 16-seat de Havilland Herons. For the five months from June 5 to October 2 the return fare will be £8 4s. 0d., but for the other seven months it will be only £6 11s. 0d.

Aircraft Exchange in London and New York

The first list of prices for aircraft offered and wanted was issued by the newly established Aircraft Exchange in New York on Tuesday, January 6 to subscribers in Britain, Europe and elsewhere. For the present, quotations are confined to transport aircraft weighing more than 20,000 lb. The latest figure of membership given by Aircraft Exchange is 67. Aircraft Exchange is a new international organisation set up to facilitate the purchase, sale and lease of new and used transport aircraft. Mr. Dennis Handover has been appointed the United Kingdom and European representative in London.

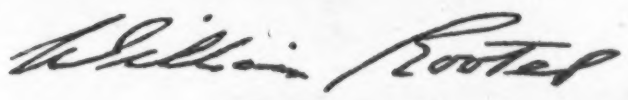
Bitter Sweet for U.S. Railroads

The United States Civil Aeronautics Board said tentatively it will pay Southern Airways Inc., $2,449,298 in mail pay and subsidy for annual periods after April 1, 1958, reports *Texas Railways* published by the Texas Railroad Association. Of the total, $2,348,098 is federal subsidy for the feeder line and $101,200 is for actual mail hauling services. The board said the total annual payments will permit Southern to earn 9.5 per cent on investment. The railroads of the nation, with absolutely no subsidy, are having difficulty making a 3 per cent return on their investment, comments *Illinois Central Magazine* bitterly on this news.

Hong Kong Reorganisation

Plans for combining, under a new company, the services of Cathay Pacific Airways and Hong Kong Airways, both with headquarters in Hong Kong, were announced in London recently. B.O.A.C. Associated Companies stated that Cathay Pacific Airways, Limited, was forming a new company, in conjunction with B.O.A.C.A.C., to take over all the assets of Cathay Pacific and buy the complete share capital of Hong Kong Airways, Limited, with a view to operating a combined service throughout the two regional spheres at present operated separately by C.P.A. and H.K.A. Jardine Matheson and Co., Limited, would also have a share in the new company. The board of the new company would consist of the existing Cathay Pacific Airways board with the addition of one director nominated by B.O.A.C.A.C., and Mr. Hugh Barton, chairman of Jardine Matheson, had also agreed to join the board. It was not expected that the new company would come into full operation for some months, but in the meantime H.K.A., which as part of the plan became a wholly owned B.O.A.C.A.C. subsidiary would be placed under the management of C.P.A. under the aegis of Butterfield and Swire of Hong Kong.

APPRECIATION OF DOLLAR EXPORTS WORK



Sir WILLIAM ROOTES, G.B.E.

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As already recorded in MODERN TRANSPORT, the New Year Honours to be conferred by H.M. the Queen include the bestowal of a barony upon Sir William Rootes, chairman of Rootes, Limited, and its associated companies, to mark appreciation of his most valuable services to Britain as chairman of the Dollar Exports Council, an office he has held since 1951. Born in 1894 and educated at Cranbrook School, William Edward Rootes served his apprenticeship to the motor industry with Singer and Co., Limited, of Coventry, and subsequently entered his father's business. On the conclusion of the war—during which he served in the R.N.V.R. (1915-17) afterwards being engaged in aircraft engineering (1917-18)—the firm of Rootes, Limited, was formed as a car-distributing company, since which time he has extended his interests and become the dominating figure of a large number of companies, most of which are concerned with financing, distribution or manufacture of motor vehicles and aircraft. Thus, in addition to the interests already mentioned, he is chairman of Commer Cars, Limited, Karrier Motors, Limited, Hillman Motor Car Co., Limited, Humber, Limited, Singer Motors, Limited, and Sunbeam Motors, Limited, to name but a few of the companies with which he is concerned. He became a member of Joint Aero Engine Committee (Shadow Industry) in 1936 and was its chairman in 1940-41, a crucial period in the organisation of Britain's wartime aircraft production. In 1941-42 he was chairman of the Supply Council of the Ministry of Supply and when that Ministry, in conjunction with the Ministry of Transport, established the Motor Transport Maintenance Advisory Committee early in 1941 he was appointed chairman. From 1939 to 1942 Sir William, who was created a K.B.E. in the latter year, was president of the Society of Motor Manufacturers and Traders. He was made a G.B.E. in the Birthday Honours of 1955. He has been a member of many Government committees, including the Overseas Trade Development Council (1933-40) and the Board of Trade Advisory Council (1931-34 and 1939-40) and has made detailed studies of road transport requirements in all parts of the world, and particularly the United States and Canada. Production methods have also received close attention and brilliant treatment.

NEW YEAR HONOURS

Transport and Industry

FURTHER NAMES

APART from the honours to be conferred by H.M. the Queen to mark the New Year which were set out in our last issue, there were other names connected with transport and industry and a further list is set out below.

KNIGHTS BACHELOR

John William Laing, C.B.E., president, John Laing and Son, Limited.

Reginald Patrick Linstead, C.B.E., rector, Imperial College of Science and Technology, University of London.

Ian Duff Lyle, D.S.C., for political services (chairman, Tate and Lyle, Limited, and Silvertown Services, Limited).

Thomas Yates, C.B.E., general secretary, National Union of Seamen.

ORDER OF THE BATH

C.B.

M. M. V. Custance, Deputy Secretary, Ministry of Transport.

ORDER OF ST. MICHAEL AND ST. GEORGE

C.M.G.

B. G. Barnard, Civil Air Attaché, H.M. Embassy, Beirut.

ROYAL VICTORIAN ORDER

M.V.O. (Fifth Class)

E. W. Belcher, M.B.E. (cabin services manager, B.O.A.C.).

ORDER OF THE BRITISH EMPIRE

K.B.E.

George William Hoggan Gardner, C.B., C.B.E., Director, Royal Aircraft Establishment, Farnborough.

Joseph Simpson, O.B.E., Commissioner of Police of the Metropolis.

C.B.E.

Alderman C. W. Allison, O.B.E., chairman, Tees Valley and Cleveland Water Board (member, Stockton Transport Committee); F. D. Arney, general manager, Port of Bristol Authority; H. Bottomley, general manager, Ribble Motor Services, Limited; S. E. Clotworthy, managing director, Northern Aluminium Co., Limited; M. Cook, chairman, metals division, Imperial Chemical Industries, Limited; C. T. Hutson, O.B.E., chief commercial superintendent, East African Railways and Harbours; R. A. Lovell, O.B.E., chief mechanical engineer, Ministry of Transport.

Captain G. H. Mayhew, commodore master, R.M.S. *Pendennis Castle*, Union Castle Line; T. H. Moffat, O.B.E., chairman, St. Andrew's Ambulance Association (formerly deputy chief regional officer, Scottish Region, B.R.); R. J. Pinder, managing director, Esso Petroleum Co., Limited; J. A. Radcliffe, O.B.E., chairman, Radar and Signals Advisory Board, Ministry of Supply, Scientific Advisory Council; R. H. Schlotel, Director of Engine Research and Development, Ministry of Supply; H. M. Sherrard, commissioner, Department of Main Roads, New South Wales; S. H. Watson, for services to transport organisations in South Australia (formerly general traffic manager, South Australian Government Railways; member, Adelaide Municipal Tramways Trust).

O.B.E.

A. Bambrough, general manager, Richard Garrett Engineering Works, Limited, Leiston; T. Bancroft, production and works director, Blackburn and General Aircraft, Limited; D. L. Brown, Assistant Director of Engine Research and Development, Ministry of Supply; H. C. Carrad, general manager, Shell Petroleum Co., Limited, Austria; Captain J. Chapman, assistant general manager, Australian National Airlines Commission; E. K. Portman-Dixon, chief of restaurant cars and refreshment rooms, Hotels and Catering Services, B.T.C.; F. Donachy, lately Scottish organiser, National Union of Railwaymen; E. T. Emmett, for services to the tourist movement in Tasmania; L. Essen, senior principal scientific officer, National Physical Laboratory; A. P. Evans, deputy chief mechanical engineer, Office of the Crown Agents.

R. J. Frizzell, general manager, Northern Ireland Tourist Board; J. Graham, principal district officer, North East District, Marine Survey Office, Ministry of Transport; G. W. Harvey, principal, Ministry of Transport; C. V. Hill, lately refining adviser, British Petroleum Co., Limited; L. J. H. Horner, assistant general manager and solicitor, Chamber of Shipping.

J. Middlemass, air traffic control officer (I), Prestwick Airport, Ministry of Transport; M. N. Oxford, Director of Civil Aviation, Federation of Malaya; J. J. J. Page, lately general manager, Basra Petroleum Company; N. C. Taylor, lately manager, Salvador Railway Co., Limited; Major P. L. Teed, deputy director, department of aeronautical research development, Weybridge, Vickers-Armstrongs (Aircraft), Limited.

M.B.E.

J. S. Barnes, director and general manager, Whites Shipyard (Southampton), Limited; J. H. Baxter, apprentice training and welfare officer, Parsons Marine Steam Turbine Co., Limited; A. Bowman, dock manager, Smith's Dock Co., Limited, North Shields; J. C. Brown, harbour engineer, Isle of Man; W. D. Childs, telecommunications technical officer (I), Southern Division, Ministry of Transport and Civil Aviation; S. H. Crawford, lately secretary, Australian National Airlines Commission; Miss M. E. Crombie, lately senior clerk, Aberdeen Harbour Commissioners; F. G. Dudley, welfare officer, cars, Morris Motors, Limited; Captain R. T. Duthie, harbourmaster, Fraserburgh.

L. Edwards, divisional traffic manager (western area), Western Region, B.R.; A. C. Emery, chief draughtsman, telecommunication group, Plessey Co., Limited; W. M. Farquhar, chief engineer, m.v. *Ulster Prince*, Belfast Steamship Co., Limited; Flight-Lieut. J. Formby, flight commander, meteorological vertical ascent flight, Short Brothers and Harland, Limited; W. Frank, chief engineer, Shell Tankers, Limited; J. Goodyear, higher executive officer, London Airport, Ministry of Transport; F. Green, higher executive officer, Ministry of Transport; R. H. E. Hosking, higher executive officer, Ministry of Transport.

D. B. James, senior superintendent, Mercantile Marine Office, London, Ministry of Transport; S. A. Jeanmond, station catering superintendent, London Airport, British European Airways; W. S. Kennedy, Chief Aerodromes Officer, Federal Department of Civil Aviation, Rhodesia and Nyasaland; B. J. J. Moran, gardening superintendent, London Transport Executive; Mrs. R. M. Munford, executive officer, Ministry of Transport and Civil Aviation; E. G. Peers, communications officer (I), London Airport, Ministry of Transport.

J. Randell, chief ship draughtsman, John Brown and Co. (Clydebank), Limited; P. C. Ruggles, senior engineer, English Electric Valve Co., Limited, Chelmsford; N. I. Shaifta, clerk (IV), East African Railways and Harbours; E. H. Simper, divisional traffic superintendent, Birmingham and Midland Motor Omnibus Co., Limited; D. Sleath, chief draughtsman, instrument department, Laurence Scott and Electromotors, Limited; E. N. O. Smith, permanent way inspector (I), East African Railways and Harbours; W. S. Stambridge, consultant, Rubery Owen and Co., Limited; C. E. Strange, higher executive officer, Ministry of Transport; A. E. V. Sturrock, pay supervisor, B.O.A.C.; F. R. Warner, head of sales department (contracts division), General Electric Co., Limited; F. C. Wells, experimental officer, Signals Research and Development Establishment, Ministry of Supply; E. S. Wilson, road safety officer, Slough; K. J. Woodgate, superintending inspector, Aeronautical Inspection Service, Air Ministry.

LETTERS TO THE EDITOR

Railway Freight Charging

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

SIR,—It was interesting to read of the possibility of a new approach to railway freight charging (MODERN TRANSPORT, December 6). However, from all that has recently been said and written of new methods of charging it seems evident that nothing really constructive will be forthcoming from those whose task it is to advise the British Transport Commission on rates matters. "Tradition" suffocated the new charges scheme to such a degree that it has not only failed in its application but has antagonised many traders because the only visible effect to many of them has been an increase in charges and this in itself has been a sure way of losing traffic to road. In stating that to regain lost ground "immediate action rests with the commercial department," Mr. Harries points to the need for swift and profitable use of the railways' new charging freedom. But is not this "freedom" too limited to allow for a way out of the "slough of traditional charging"? The decreasing traffic receipts reveal the failure of any attempts made so far to overcome the problem.

If the answer is to be found by the commercial department, it may be found only by an entirely new and simplified method of charging which will result in administrative economies sufficient to provide a considerable reduction in freight rates. Otherwise, acceleration and eventual completion of the modernisation plan will come too late to succeed. The opening of each new motorway means a continued decline and the ultimate fall of a self-supporting rail system unless something is done *now*. The way to simplification of charging has been shown in the system of flat rates applied to certain firms' traffic. Why shouldn't this system be extended to cover all freight traffic? Why not a fixed flat rate, irrespective of distance carried, for each of the three main flows of traffic—coal and coke, minerals and goods, with a tonnage rate for all except perhaps consignments of goods of less than a ton when a rate per cwt. would be easier to apply?

Initial Rates

How to fix the initial rate? The following example is given as a basis: If the average rate per ton of minerals now carried represents 20s. and the railways are working at only 50 per cent of their capacity, reduce the rate to a figure which will produce the same income assuming that the lower rate will result in an increase of traffic to reach 75 per cent of the railway's capacity. Once the flat rate for each of the three classes of traffic has been fixed the next step would be to arrange a rate of rebate (or discount) with all traders forwarding, say, a minimum of 50 tons of minerals traffic per month or, say, 20 tons of goods traffic. The rebate would be at a rate per ton on an increasing scale to correspond with the tonnage forwarded. Rebate would be deducted at the time of rendering the trader's monthly account.

The rebate available for distribution would be obtained from the saving in costs resulting from the simplified manner of charging and accounting. Firm figures are not available but assuming the saving of 10,000 posts of staff engaged at present directly or indirectly in rating, charging, accounting, rate negotiations, sales organisation, dealing with disputes, etc., at an average salary of £600 would provide a sum of £6 million per annum. The simplified method of charging would mean that full advantage could be taken of the mechanisation of accounts. It is also clear that the trader would appreciate the saving of his own clerical costs in rate negotiations, checking of accounts, etc., and the foreknowledge he would have of his transport costs. The rebate system will enable the railways to compete with road haulage much better than by the present cumbersome methods which are mainly confined to single lots or periodic flows of traffic.

Railway lorry drivers could be supplied with simple scales of charges from 1 to 20 cwt. to enable them to collect carriage charges at time of loading goods from senders who have no credit account. This would not only avoid the present uneconomical way of dealing with casual accounts but would secure payment currently. Here, then, is the germ of an idea. It has probably been considered before but dismissed as impracticable. It is practical because it is logical. It provides the means to sell rail transport wholesale instead of the traditional piecemeal methods which today are obsolete.—Yours faithfully,

H. J. CONQUEST.

39 Beech Avenue,
Radlett, Herts.

Coach v. Train

SIR,—I have been following with interest the Coach v. Train correspondence in MODERN TRANSPORT. If I understand rightly, what Sir Reginald Wilson is reported (in your issue of November 15) to have said means that motor coach operators can provide cheaper transport than the railways because they require passengers to book beforehand, to enable them to keep to a minimum the number of empty seats in their running vehicles. The railways, on the other hand, consider it their duty to provide seats for passengers who, at a moment's notice, decide to make a journey.

Last July and August I travelled across the United States with my wife and two small children. Our journey lasted a month and we travelled all the way by bus. We booked no seats, and we did not arrange our route until the day we left Los Angeles. Afterwards, although we kept to our planned route, we broke our journey as we wished, sometimes at small, wayside stops. Altogether we travelled in 21 long-distance buses. We were never left behind at a boarding point, and we always had at least the number of seats we had paid for. Once, between Memphis and Chattanooga, we travelled in a duplicate bus which was put on at the last minute because the regular Scenicruiser was full of passengers bound for Washington and beyond; at all other times we had seats in the regular service vehicle.

Sir Reginald Wilson states that only the railways have the facilities for dealing with extraordinary traffic. Again I can only give my personal experience: we had intended to travel the whole distance by Continental Trailways. In Los Angeles, however, we were told that, at least as far east as Salt Lake City, Trailways crews were out on strike. Nevertheless, we were able, without booking, to obtain seats in Greyhound vehicles for this part of our journey.

I realise that conditions in the United States are different, but all I wish to show is that in one country where coach travel is cheaper than rail travel it is not necessary to book seats in motor coaches.—Yours faithfully,

D. C. CARTWRIGHT.

Leafland,
Holmer Green,
High Wycombe, Bucks.

The First Excursion

SIR,—Mr. Bardsley's letter in your issue of December 13 re-poses the old question: What is an excursion?

My understanding is that in railway parlance it implies a special train on which passengers are conveyed at reduced fares. Whether this is organised by the railway itself or by an agent or promoter under a guarantee arrangement, is immaterial. I do not know if the Epsom train fulfilled these conditions, but the Bodmin one certainly did.

The travelling public of course applies "excursion" to any facility at less than full fare, whether they are carried by ordinary or special trains.—Yours faithfully,

C. R. CLINKER.

9 Regent Place,
Rugby, Warwickshire.

Cross-Channel Air Ferry

SIR,—In your issue of December 20 you quote Mr. Mekie as suggesting that the reason for the 9 to 1 ratio of British to foreign cars on the Channel air ferry was fear of British traffic congestion while you yourself put much of the blame on inadequate tourist allowances. I have many friends and relatives living in other European countries and have never heard either of these arguments used at all. The one invariably quoted is "cost." The motorist living in a country on the mainland can get all the fun and change of environment that "going abroad" provides, merely by driving across a land frontier, which costs him nothing except the price of his carnet de passages en douanes. To come to Britain, on the other hand, either by sea or by air, costs him, for himself, his wife and two children, with the smallest car, at least £18 16s. (return) on top of his other expenses, which is the price of nearly a week's stay for the whole family in one of the smaller German inns.

The Briton who wants to go abroad, however, has got to cross the sea, and so accepts the extra cost as inevitable, pays up and travels. The same trend can be seen in the number of tourists by rail and air, though it is much less marked. About twice as many British travellers go to other European countries for their holidays (by rail) as visitors from other European countries come here. The cost of the sea crossing makes the trip proportionately more expensive than the same distance by rail all the way inside Continental Europe. British internal rail fares are however among the cheapest in Western Europe and so this disadvantage tends to disappear if the foreigner is travelling far from his port of arrival. The number of foreigners travelling in Scotland, for example, is probably about equal to the number of Scotsmen holidaying on the Continent. Even by air the effect is still noticeable because air fares between the United Kingdom and other countries in Europe are often rather more expensive (per mile) than those between cities in countries both of which are on the mainland.—Yours faithfully,

G. H. HAFTER.

49 Church Street,
Isleworth, Middlesex.

Forthcoming Events

January 10.—Railway Correspondence and Travel Society (Sussex and Kent). Annual dinner. At Regent Restaurant, Brighton.

Railway Correspondence and Travel Society (South of England). Paper by Mr. D. Bradley, "Locomotives of the S.E.R." At Y.M.C.A., Friar Street, Reading. 6 p.m.

January 12.—Institute of Transport. Paper by Mr. F. D. Arney, "The Role of the Port Authority in Shipping Turnround." At 66 Portland Place, W.1. 5.45 p.m.

Railway Correspondence and Travel Society (Northampton). Paper by Mr. J. Harrison, "Locomotives seen in Spain and Portugal." At Liberal Club, Castilian Street, Northampton. 7.30 p.m.

January 13.—Institute of Transport (Yorkshire). Paper by Mr. H. H. Crow, "Liquids Transport by Road Tank Wagon." At Griffin Hotel, Leeds. 6.30 p.m.

Institute of Transport (North Staffordshire). Paper by Mr. J. Pollard, "French Railways." At Grand Hotel, Hanley. 6.30 p.m.

Institute of Transport (Metropolitan G. and S.). Paper by Mr. F. G. Willis, "A Brief Review of the Development of Highways." At 80 Portland Place, W.1. 6.15 p.m.

Institution of Mechanical Engineers (Automobile). Paper by Mr. E. Woodbridge, "Standards and Standardisation in the Motor Industry." At 1 Birdcage Walk, S.W.1. 6 p.m.

Permanent Way Institution (York). Paper by Mr. H. Field, "The Use of the Matisa Recording Trolley." At Railway Institute, York. 6.45 p.m.

Stephenson Locomotive Society (London and Southern). Paper by Mr. G. H. Dickson, "French Railways since the War, with some references to the past." At Caxton Hall, Westminster, S.W.1.

January 14.—Institute of Transport (Southern). Paper by Mr. E. W. Arkle, "Railway Management." At Offices of Harbour Board, Town Quay, Southampton. 5.45 p.m.

Institution of Locomotive Engineers. Paper by Mr. J. H. Currey, "Automatic Train Control—the B.R. System." At Institution of Mechanical Engineers, 1 Birdcage Walk, S.W.1. 5.30 p.m.

Institution of Railway Signal Engineers. Paper by Mr. P. W. Hanstock, "Microwave Radio for use in Trunk Telecommunications Networks." At Institution of Electrical Engineers, Savoy Place, W.C.2. 6 p.m.

January 15.—Institute of Transport (Northern Ireland). Paper by Mr. R. Mackenzie, "Some Aspects of Passenger Transport Operation." At 21 Linenhall Street, Belfast. 6 p.m.

Institute of Transport (Liverpool G. and S.). Paper by Sqdn-Ldr. W. A. R. Harris, "Siting, Planning and General Management of Airports." At Committee Room, Liverpool Corporation Passenger Transport Department, 24 Hatton Garden, Liverpool. 7 p.m.

Diesel Engineers and Users Association. Paper by Mr. H. L. Troughton, "Multi-fuel High Speed Diesel Engines." At Institute of Marine Engineers, Memorial Building, 76 Mark Lane, E.C.3. 2.30 p.m.

January 16.—Institute of Transport (South Wales and Mon.). Paper by Mr. P. Fisher, "Electrification of Crewe—Manchester Railway." At Royal Hotel, Cardiff. 7.15 p.m.

Institute of Transport (Tees-side). Paper by Mr. M. H. Curtis, "Air Transport—Chaos or Progress Ahead." At Cleveland Scientific and Technical Institution, Middlesbrough. 6.30 p.m.

Institute of Navigation. Paper by Mr. W. J. Charnley, "Blind Landing Problems." At Royal Geographical Society, 1 Kensington Gore, S.W.7. 5.15 p.m.

MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

PROGRESS REPORTS

Airlines Announce 1958 Figures

PREPARATIONS FOR NEW MACHINES

NEW annual peaks in the passenger and cargo operation of United Air Lines were achieved in 1958, according to Mr. W. A. Patterson, the president, reported in a review of the year. He added that a small part of these record volume increases was due to the misfortune of other air carriers in experiencing serious labour difficulties. An estimated 7,200,000 passengers were carried by United in 1958, an increase of 8 per cent above the previous record year of 1957. In the same period, the company's fleet operated 5,150,000,000 revenue passenger-miles for a 6 per cent increase and 135,215,000 revenue aircraft-miles, a rise of 4 per cent.

Cargo volumes reached 67,000,000 freight ton-miles, 17 per cent up on the preceding year; 32,500,000 mail ton-miles for a 9 per cent increase; and 10,700,000 express ton-miles for a 12 per cent gain. On the year's peak travel day—August 28—United flew 25,087 revenue passengers for 19,603,712 revenue passenger-miles, the highest single-day figure in company history. During the summer holiday season, United increased its passenger lift by 7 per cent and cargo by 6 per cent.

United Looks Ahead

The first of the Douglas DC8s to enter domestic jet service for United this year left the production line last August and is undergoing rigorous flight testing. United has on order 40 DC8s for long-range service and 11 Boeing 720 medium-haul aircraft. Delivery of the latter will begin in the spring of 1960. Pilot training commenced in September at the Denver flight training centre, where a Link DC8 electronic flight simulator is introducing pilots to the 24th type of aircraft to be operated by United.

Mr. Patterson suggested that the fact that United began training its pilots in September, 1958, to introduce DC8 jet service a year later underlined further the all-out emphasis by management on absolute and complete preparation for the new conditions. In addition, the establishment of the airline's high altitude weather centre at Denver was further evidence of the philosophy of detailed long-range planning. At key points on United's 80-city system extensive hangar and terminal construction was under way.

Reservations System

During 1958 plans were announced to open the world's largest airline training centre of its kind at Denver in 1961. In mid-year United ordered a $16-million passenger reservations system from Teleregister Corporation designed to handle the greatly increased reservations load expected from jet operations. The system, to become operational in 1960, will increase data transmission speed 15 times, making it possible to process most reservations electronically in less than one second.

Two cities—Columbus and Dayton, Ohio—were added to the company's 14,000-mile network following a decision of the U.S. Civil Aeronautics Board. At the end of the year, United was preparing to start service to the Ohio communities within a few months. In a demonstration of the use of air transport in mass movements, United joined with six other airlines in flying almost 10,000 persons to previews in Nassau, Bahamas, Iowa and Illinois of the 1959 ranges of two farm equipment manufacturers. United is supplying three-fourths of the total airlift continuing into this year.

Irish Traffic Breaks Records

A record total of over 500,000 passengers and 9,100 tons of cargo and mail were carried by Aer Lingus. Passenger traffic increased by almost 60,000 and cargo traffic by 1,000 tons over the previous year and the company's aircraft travelled over six million miles during the year. 1958 was a year of expansion and development. In April a new transatlantic service from Dublin to New York was inaugurated by Aerlinte Eireann Lockheed Super Constellation aircraft operated for it by Seaboard and Western. In October this service was modified to call at Boston and new offices were opened in New York and Boston. Despite the late start of the service, passenger traffic exceeded the original estimates.

Outstanding feature of the European operations was the record traffic to Lourdes for the centenary celebrations. In a year when the airline served more cities in Europe than ever before, the Dublin—Lourdes route was the busiest Continental route. A special building was erected at Dublin Airport to cater solely for Lourdes traffic and by the end of the financial year Aer Lingus will have carried over 50,600 passengers on services to the French shrine.

New Aircraft

Permission to operate scheduled services between Lourdes and Rome was given to Aer Lingus by the French and Italian Governments and traffic on this route exceeded all expectations. The Irish airline was the first to operate direct scheduled services between these two points. In November the first two of seven Fokker Friendships on order were delivered at Dublin Airport and Aer Lingus is the first airline in Europe to operate these aircraft. When the substitution for DC3s is completed early this year, it is expected that it will also be the first in the world to operate an all prop jet passenger fleet.

Development plans for the current year, to which reference has already been made in MODERN TRANSPORT, include the inauguration of services to Lisbon and Copenhagen. The present Dublin—Manchester—Zurich—Rome service will terminate at Zurich to provide better arrival and departure times in Switzerland, and a new route to Rome via Paris and Zurich will be opened in April. Dublin Airport also reported record traffic during the year with almost 559,000 passengers and 10,000 tons of freight and mail passing through the airport.

T.C.A. Increases Capacity

Trans-Canada Air Lines in 1958 provided the travelling public with the greatest transport capacity in its 21-year history and carried a record-breaking number of passengers estimated at 2,757,000. This was announced by Mr. G. R. McGregor, president of T.C.A., in an annual review. In expanding its activities to meet the ever-increasing demand for air transportation, T.C.A. offered more than two thousand million seat-miles, an increase of 19 per cent over the previous year. Approximately 1,632,090,000 revenue passenger-miles were flown, a rise of 17 per cent.

Carriage of mail, express and freight remained at approximately the 1957 level with some 10,000,000 mail ton-miles, 2,500,000 express ton-miles and 12,680,000 freight ton-miles being flown. During the year T.C.A. expanded its international network to include Zurich, Brussels, and Antigua in the West Indies. A non-stop flight was begun between Montreal and Paris, linking the two largest French-speaking cities in the world with a direct Canadian-operated service.

Serving Western Canada

Western Canadians in particular shared in the T.C.A. international route expansion, with the introduction of a new transatlantic schedule from Vancouver to London, calling at Winnipeg. A twice-weekly service to Antigua was commenced in mid-December by calls on the Bermuda—Barbados—Trinidad route from Montreal or Toronto. There was a significant increase in passenger capacity and flight frequencies on the transcontinental and transatlantic routes. During peak operations T.C.A. provided more than 650 daily round-trip seats across Canada and more than 1,000 round-trip seats each week across the Atlantic.

It is expected that by 1961 T.C.A. will become the first intercontinental airline in the world to operate an all-turbine fleet and throughout the past year all departments of the airline have been engaged in thorough preparation for introduction of the new types of equipment. Of particular importance was the commencement of construction in 1958 of a $20,000,000 overhaul and maintenance base in Montreal designed specifically for turbine-powered aircraft. This facility will take care of T.C.A.'s future fleet of Douglas DC8s jets and Vickers Vanguard turboprops. Delivery of T.C.A.'s first DC8 aircraft is expected in the autumn.

P.A.A. Transatlantic Loads

A marked rise in traffic in the latter half of 1958 gave Pan American World Airways an increase of 11 per cent over 1957 on its transatlantic routes, according to Mr. Willis G. Lipscomb, vice-president, traffic and sales. In the last six months of 1958 traffic on these routes gained 18 per cent over the last half of 1957, in a dramatic upswing. He attributed this growth in transatlantic traffic to improved business conditions and to the introduction of the P.A.A. jet service on the Atlantic. The stimulating effect of the jets, he said, could be judged from the fact that advance bookings to Paris, Rome and London, Pan Am's jet destinations during the period from January to the end of April, are 2¼ times those on the books for a similar period a year ago.

Viscounts in India

Although figures for the whole of 1958 are not yet available and most of those set out above are necessarily estimated for the last month, it should be recorded that Indian Airlines Corporation Vickers Viscounts ran at an average revenue load factor of 67 per cent from their introduction on I.A.C. routes in November, 1957, to September 30, 1958. During that period, Viscounts have earned over 263 lakhs of rupees (approximately £2 million) and have shown a consistent profit. The achieved revenue load factors have been:

	per cent
Bombay—Karachi—Bombay	39.6
Bombay—Madras—Colombo	62.3
Bombay—Delhi—Bombay	74.3
Delhi—Bombay—Delhi	80.5
Calcutta—Rangoon—Calcutta	56.8
Delhi—Calcutta—Delhi	76.3
Delhi—Hyderabad—Madras	50.4
Calcutta—Bombay—Calcutta	82.0

During this period I.A.C. carried nearly 134,000 Viscount passengers. On a number of the routes listed increases in passenger traffic have been of the order of 50 per cent since Viscounts came into service and the load factors have been achieved despite the fact that the 10 I.A.C. Viscounts offer 44 seats per trip compared with the 27 of the Vickers Vikings previously used in many cases.

Mr. John H. Lord has retired from his executive duties as a managing director of the Dunlop Rubber Co., Limited. He will remain on the board.

Passenger trains were withdrawn between Monmouth Troy and Ross-on-Wye and between Monmouth Troy and Chepstow on and from January 5.

Locomotives for Rhodesia

(*Continued from page 3*)

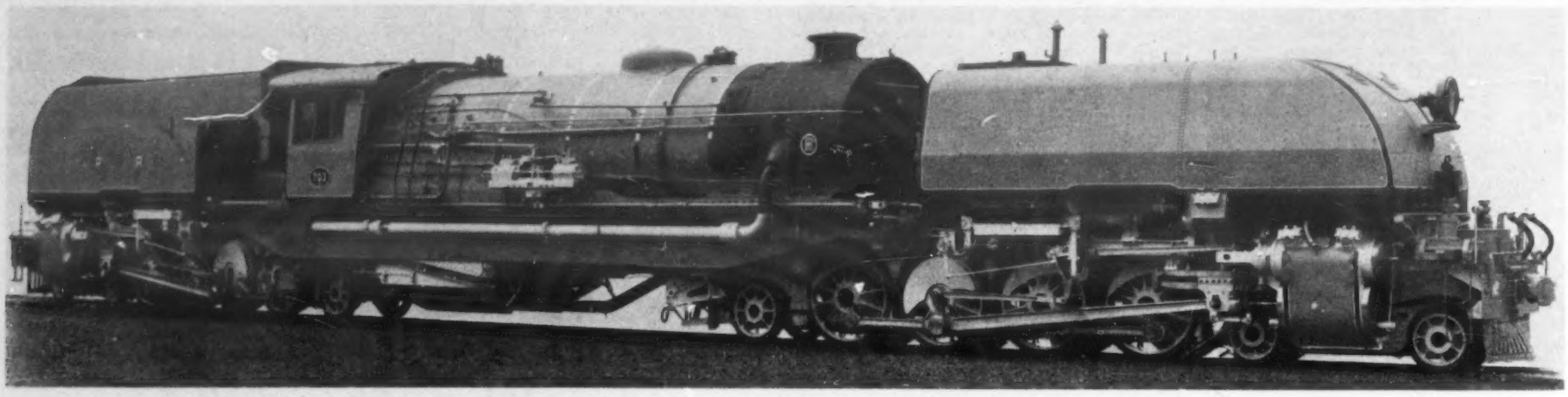
engines are supplied by Davies and Metcalfe, Limited, and the boiler mattresses in this case are of asbestos and manufactured by J. W. Roberts, Limited. There are Skefko roller bearings for the return cranks and the motion is equipped with Hadfield precision power reverse gear. The Gresham and Craven type SSJ ejector is provided for the vacuum brake on the train. The engines are equipped with the Everlasting Valve Company's blow-off cocks and Paxton-Mitchell metallic packing was supplied for them by the United States Metallic Packing Co., Limited. Ross Pop safety valves are used and live steam injectors (No. 13 RHW type) are provided by Gresham and Craven, Limited. The Superheater Co., Limited, furnished the Melesco superheater and the multiple valve regulator. Sanding equipment is Lambert type, supplied by Gresham and Craven, Limited. Ajax grease lubrication is applied to the motion, spring gear, brake gear parts and similar fittings. Electric lighting equipment is by Stone's and the electrical speed indicators are of the Smith-Stone design also supplied by J. Stone and Co., Limited. Buffing and coupling gear includes Alliance couplers and yokes by the English Steel Corporation, Limited, and Spencer-Moulton draft gear.

4-8-2+2-8-4 BEYER-GARRATT 20A CLASS FOR RHODESIA

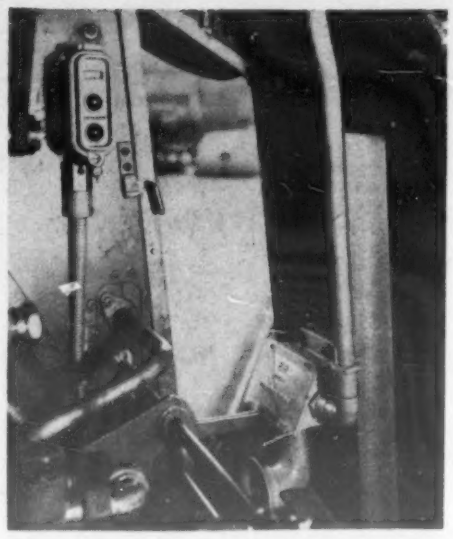
Gauge	3 ft. 6 in.	Tractive effort at 85 per cent b.p.	69,330 lb.
Cylinders (4) dia. by stroke	20 in. by 26 in.	Tractive effort at 75 per cent b.p.	61,180 lb.
Coupled wheel, dia.	4 ft. 3 in.	Boiler pressure	200 lb. per sq. in.
Bogie wheel, dia.	2 ft. 9 in.	Boiler barrel, dia.	7 ft. 3 in.
Pony wheel, dia.	2 ft. 9 in.	Length between tubeplates	18 ft. 6½ in.
Wheelbase, each unit	29 ft. 8 in.	Heating surface :	
Wheelbase, rigid	13 ft. 9 in.	Tubes (50 flue 5⅛ in. o.d.)	
Wheelbase, total	87 ft. 1½ in.	(258 small 2 in. o.d.)	2,791 sq. ft.
Length over buffers	95 ft. 6¼ in.	Firebox (inc. arch tubes)	233 sq. ft.
Height (rail to top of chimney)	13 ft. 6 in.	Total evaporative	3,024 sq. ft.
Width over cab	10 ft. 6 in.	Superheater—1¼ in. o.d. tubes	748 sq. ft.
Axle load	17 tons	Total	3,772 sq. ft.
Adhesive weight	136 tons		
Coal capacity	14·5 tons		
Water capacity	8,000 gals.		
Total weight (in working order)	approx. 225 tons		
Curvature	275 ft. radius, ¾ in. widening, 4¼ in. superelevation	Grate area	63·1 sq. ft.

The Rhodesia Railways undertaking places considerable reliance upon the 20th and 20A Classes for working much of its heavy traffic. The 60 engines are shedded at Bulawayo, Livingstone and Broken Hill; they operate all trains, passenger and freight, between Thomson Junction and Livingstone over the Victoria Falls bridge, and between Broken Hill and Kafue. On the last-mentioned severe section loads of 1,400 tons are handled on long grades of 1 in 65. The working between Broken Hill and Ndola is being gradually taken over and will shortly be entirely carried out by locomotives of these classes. They are also to be found on heavy trains between Bulawayo and Wankie, and additionally make trips to Gwelo. From Wankie to Bulawayo loading is 1,950 and on the Bulawayo—Gwelo section 1,650 tons.

The design is to the requirements of Mr. J. G. P. Hamilton, the chief mechanical engineer of the Rhodesia Railways at the time of the order. The 20th Class was ordered by his predecessor, Mr. F. E. Hough. The contract was under the supervision of Freeman, Fox and Partners, consulting engineers to the railway.



The 40 3 ft. 6 in. gauge 20A Class 4-8-2+2-8-4 Beyer-Garratt locomotives for the Rhodesia Railways weigh 225 tons, have a 17-ton axle load and can exert a maximum tractive effort of over 69,000 lb., being rostered for train loads of up to 2,000 tons



Visual control and warning horn of Integra apparatus on two engines of the 20A Class

and a warning horn. The receiving relays (which operate in conjunction with the direction of the locomotive) cause the horn to sound and a blue light on the visual control unit to extinguish.

If the driver does not heed this warning and cancel it by the push-button which is conveniently placed near him in the cab, then within six seconds of the horn sounding an emergency brake application will be made, a red light will be switched on and an electrical counter in the visual control unit will advance one number. The driver cannot then restore the correct functioning of the approach warning gear until he brings the train to rest, climbs out of the cab and re-adjusts the setting handle.

Checking Driver's Actions

After the journey the visual electrical counter can be checked and the reason for any emergency brake applications made during the journey can be ascertained from the driver. The equipment on the locomotive must, initially, be set by the driver for forward or reverse direction of the locomotive (whichever applies) before commencing the journey, otherwise if this adjustment is incorrect the approach warning device will come into operation at every track magnet irrespective of the direction of travel for which the warning is intended.

Two of the locomotives have been equipped with approach warning devices on the Integra system to give ample warning to a driver by audible and visual means that he is approaching a place where his special vigilance is required. Magnets are placed between tracks at places where it is necessary to warn the driver of special vigilance conditions and these operate the receiving relays fitted to the locomotive, which in turn are connected via an apparatus case containing automatic switching mechanism, to a cancelling button, a visual control unit,

ROAD VEHICLE INDUSTRY

Low-Loading Trader Introduced

PRODUCTION has begun by Ford Motor Co., Limited, of a new series of forward-control Thames Trader commercial vehicles to meet the requirements of operators needing a low floor line. The new range, which comprises chassis and chassis-cabs of from 30 cwt. to 5 tons capacity with four-cylinder petrol or diesel engines, employs frame sidemembers arched over the rear axle and specially designed springs, giving a frame height 9 in. lower than the standard Trader. Prices range from £750 for a petrol-engined 30-cwt. chassis to £1,113 for a diesel-engined 5-ton chassis, both inclusive of purchase tax. Last month Ford Motor Company announced a price reduction of £30 for the 10-12 and 15-cwt. Thames vans. As an example, the 15-cwt. van in primer now costs £549, including U.K. purchase tax, instead of £579.

Leyland Hub Grease Change

LITHIUM-BASED grease is to be used in future by Leyland Motors, Limited, for lubrication of all road wheel bearings of its vehicles. One of the main characteristics of the new lubricant as its high drop point of about 300 deg. F. compared with 212 deg. F. of the grease previously used. Lithium grease should not be mixed with other greases as the resultant mixture might have a lower melting point than either of the constituents.

Albion Claymore Axle Ratios

CLAYMORE underfloor-engined diesel goods vehicles for 4- and 5-ton payloads, which were introduced a few months ago by Albion Motors, Limited, now have the choice of three axle ratios instead of the two previously offered. The ratio to be added to the two already offered of 5.85 to 1 and 7.2 to 1 is an intermediate one of 6.66 to 1. With this ratio, vehicles having a gross weight of 140 cwt. will have a speed of 35 m.p.h. and will climb a gradient of 1 in 3.6. Claymore lorries of 165 cwt. gross weight will have a speed of 37 m.p.h. and climb a gradient of 1 in 4.5.

Useful R.A.C. Folder

LIGHTING-UP times for 1959 are given in a handy pocket-sized lighting-up timetable and mileage indicator just published by the Royal Automobile Club. It shows lighting-up times for each day of the year for London, Bristol, Birmingham, Leeds, Manchester, Newcastle upon Tyne, Glasgow and Belfast and a quick-reference mileage indicator gives distances between 45 important towns. The folder is available to R.A.C. members free from any R.A.C. office.

Ford Success in U.S.A.

EXCEEDING the 1958 record by over 20,000 and the 1958 target by 2,000, Ford Motor Co., Limited, Dagenham, has exported 42,000 cars and light commercial vehicles to the United States in the year just ended. Car shipments in 1958 increased by nearly 90 per cent but light commercial vehicle shipments increased by 10 times from 300 to 3,000 units. Ford accounts for over 80 per cent of British light commercial vehicle registrations in the U.S.A., the demand for the Thames 15-cwt. van being outstanding.

Reinforced Resin Jointless Flooring

A METHOD of producing an inexpensive and durable jointless floor covering for commercial vehicles has been developed by Tom Byatt (Engineers), Limited, Fenton, Stoke-on-Trent. Based on polyester resin made by Bakelite, Limited, the new flooring surface, which has been passed by the Board of Trade for use in calibrated bodies, is designed to protect the original floor against the damaging effects of heavy and abrasive materials such as coal, coke and granite. The method of construction adopted is to score the original floor of the vehicle to provide a suitable key, a layer of Bakelite polyester resin suitably modified with an abrasive grit then being spread in a continuous film over the surface. A 2-oz. glass fibre mat impregnated with a similar mix is then fixed into position over this first coat and the operation completed by the application of a final layer of the same resin containing a high proportion of the abrasive grit. The covering is then consolidated by rolling and allowed to set. With the exception of materials likely to destroy the surface by burning (for example, hot ashes) any load can be carried on the Byatt flooring and, being waterproof, it is particularly valuable for carrying wet loads such as sand and gravel. With no loose edges to impede free passage of contents, the new floor has proved particularly effective on tipping vehicles and the weight of an average reinforced resin lining for a 6-ton l.w.b. lorry is only 36 lb. compared with that of 1½ cwt. of conventional steel floor lining.

Perkins-Engined Mobile Laboratory

UNIQUE conditions in South Africa, where it is estimated that 42 per cent of the diesel-engined vehicles at work are at altitudes of over 5,000 ft. above sea level, has led to the introduction by the Shell Petroleum Company in Cape Town of a mobile laboratory for determining the effects of altitude on different diesel fuels. The vehicle involved, which carries a variety of instruments for the purposes of the research, is a Dodge Kingsway car fitted with a Perkins P4(c) diesel engine set to give 58.5 b.h.p. at 3,000 r.p.m.

European Show Dates

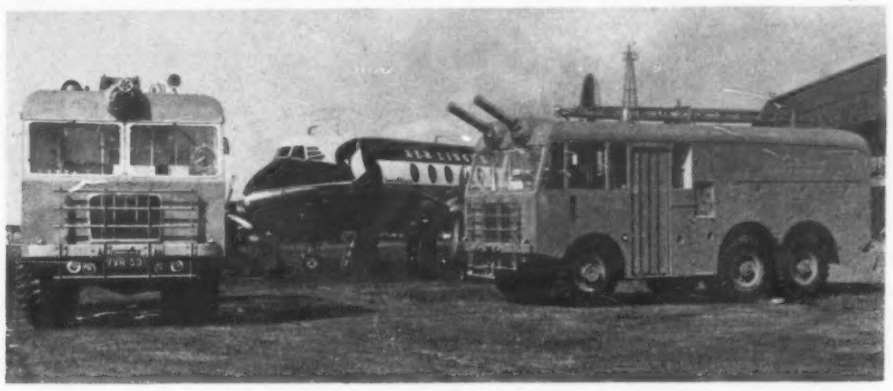
DATES of the first two 1959 commercial motor vehicle exhibitions in the European calendar are February 6 to 15 at Amsterdam and March 12 to 22 at Geneva. The biennial R.A.I. (Netherlands Association of the Bicycle and Automobile Industry) show in Amsterdam will probably be the last to be held in the present hall, where the 237,000 sq. ft. of stand space will be filled to capacity, as the new and much larger R.A.I. Exhibition and Congress Hall now under construction is due to be completed in the spring of 1961. The Swiss show is again enlarged this year, with a large showing of commercial vehicles on the neighbouring Plaine de Plainpalais as well as in the exhibition buildings, and a test ground for demonstration of road building and contractors plant.

Leyland Albion African Service

LARGE-SCALE unit-exchange schemes for Leyland and Albion commercial vehicles have been introduced in South Africa by Leyland Albion (Africa), Limited, and also throughout the Central African Federation by the newly formed company of Leyland Albion (Central Africa), Limited, similar in pattern to that employed in Britain by the Leyland headquarters service organisation. The scheme now covers tested and guaranteed engines, gearboxes, differential assemblies, fuel injectors and pumps, starter motors, generators and other units such as water pumps. Speed is an essential feature of the scheme, enabling even major repairs to be completed in a matter of hours. For virtually a new unit, the operator pays only the cost of overhauling his own unit plus any major replacements.

Tyrex Yarn for Tyre Construction

AT a technical symposium held in December, Courtaulds, Limited, announced that the name Tyrex is to be used for the latest cellulose tyre yarn developed by the company. Tyrex yarn is the result of major advances in research into the construction of cellulosic fibres and it is the first yarn ever to be produced specifically for tyre construction. It is claimed to give a better combination of economic and technical requirements, which may be summarised as high strength, resilience, resistance to heat and growth, high fatigue life and compatability with tyre-manufacturing processes, than any other tyre-cord material. Mr. C. F. Kearton, managing director of Courtaulds and of British Celanese, said at the symposium that he was confident that Tyrex yarn, an original British development, would be the essential basis of tyre construction here from now on.



Built for speed: A pair of Thornycroft Nubian airfield fire-crash tenders recently delivered to City of Manchester Airport Fire Brigade, with a Vickers Viscount of Aer Lingus in the background. Powered by Rolls-Royce B81 petrol engines for fast acceleration and high speed across country and bodied and fully equipped by A.F.P. Engineering, the tenders can project jets of foam 200 ft. at rates of 3,000 and 6,000 ft. per min. respectively

Built for speed: A Leyland Super Comet 9-ton lorry powered by the Leyland O375 diesel engine was one of the first vehicles to use the Preston by-pass motorway, when with a full test load it covered the 8½-mile length at speeds in excess of 70 m.p.h.

LONDON TRANSPORT RM BUSES

More Route Testing

FOR some weeks London Transport has had two vehicles in service with lorry bodies to enable service testing of Routemaster bus mechanical components to be carried out in advance of the availability of production vehicles, which vary slightly from the four prototypes already in passenger service. These prototypes are two A.E.C. RM-class buses, one Leyland RML bus and one Leyland CRL coach. In addition, an A.E.C. unit, RM8, was on show at the Commercial Motor Transport Exhibition last September. The test-rig vehicles have been running one on route 11 (Shepherds Bush—Liverpool Street) and the other

One of two London Transport test vehicles embodying RM-class bus running units

on route 46 (Alperton—Waterloo) and are providing further valuable information on the behaviour of Routemaster units under service conditions, it is stated. To take the place of the normal passenger-carrying body (the Routemaster is a chassisless vehicle) a welded steel structure of rolled sections has been manufactured, extending the full length of the test vehicle, with attachment points for the mechanical units.

Behind the observation cabin is a platform for carrying sand ballast to make up the weight of a complete bus carrying half its passenger load. To allocate the weight correctly some has been placed on the roof of the cabin and cab structure. Tarpaulins are stretched over the ballast to give weather protection. As standard Routemaster mechanical units are on test, the vehicles incorporate power steering, fully automatic gearchange, independent front suspension, and power hydraulic braking. The four-man cab behind the driver can be fitted with instruments for recording information on the performance of the engine and auxiliary services.

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TURNED FROM TRAINS

L.T.E. Statement

MR. B. H. HARBOUR, member of London Transport Executive for operations, made the following statement on Saturday, January 3, 1959:

London Transport regrets that there are certain occasions when it may be necessary to ask passengers to leave Underground trains either for reasons of safety or for the maintenance of service. I can give the public my personal assurance that this step is never resorted to except when there is no other alternative without creating greater hardship.

When passengers are asked to leave a train it is always undertaken with one object in view—to serve the public, to minimise delay and to get passengers travelling on the whole line to their destinations as quickly as possible. I realise to the full the inconvenience which is caused by rush-hour delays on the heavily laden Underground but I would earnestly ask for the fullest co-operation from passengers with our railway officials in this matter. Our sole objective in operating the Underground services is to serve the public efficiently and to get the passengers to and from their destinations as quickly as possible.

The refusal of some passengers to leave trains last night when asked to do so by railway officials resulted in more than 10,000 passengers being held up unnecessarily for up to 40 minutes. Such action can only make rush hour conditions more difficult for thousands.

Editorial comment on incidents which gave rise to Mr. Harbour's statement appears on page 1.

CLASSIFIED ADVERTISEMENT

SITUATION VACANT

LONDON TRANSPORT require Technical Assistants for Telephone Section, Signal Engineer's Drawing Office, Earls Court. Duties include preparation of all types of drawings and circuits for manual and automatic telephone systems.

Applicants should have knowledge of manual and automatic telephone systems and be trained for telephone work. Ordinary National Certificate in Electrical Engineering advantageous.

Salary range £515 at age 24 rising to a maximum of £767. Commencing salary up to £675 dependent upon age and qualifications. Additional payments for recognised qualifications. Opportunities for further promotion; 38-hour week; free travel; contributory superannuation fund. Applications within seven days to Staff and Welfare Officer (F/EV 721/2), London Transport, 55 Broadway, S.W.1.

SOCIAL AND PERSONAL

Bedford Vehicle Designer

WE record with regret the death of Mr. F. A. Stepney Acres, M.I.Mech.E., 77 years of age and former commercial vehicle engineer of Vauxhall Motors, Limited. He joined the company in 1927 and played a leading part in the initial design and subsequent development of the Bedford goods vehicle. He was appointed commercial vehicle engineer in 1937. During the 1939-45 war he became heavy vehicle engineer on the Churchill tank project. His last appointment in the Vauxhall engineering department was as military vehicle engineer and his retirement was deferred until 1952 to enable him to complete a major design assignment.

* * *

Aircraft Exchange, Incorporated, announces that Mr. Dennis Handover has been appointed United Kingdom and European representative in London. Aircraft Exchange is the new international organisation set up to facilitate the purchase, sale and lease of new and used transport aircraft. Its London office will be the centre for transactions in the United Kingdom, Europe and sterling area. Mr. Handover was formerly traffic director, B.O.A.C.

* * *

The Esso Petroleum Co., Limited, announces that Mr. H. C. Tett, formerly a managing director and chief executive, has been appointed chairman and managing director with effect from January 1, following the retirement of Sir Leonard Sinclair. Mr. Tett studied at the University College of the South West, where he read physics and mathematics and at the Royal College of Science, London, where he graduated with honours in physics and was awarded a B.Sc. He was later awarded the

Mr. H. C. Tett

Mr. H. J. Castle

diploma of Imperial College for research work on combustion and tetra-ethyl lead. He joined Esso in 1928 as an assistant in the technical sales department and became manager of that department in 1935. During the war years he served as a member of the technical advisory committee of the Petroleum Board. In 1947, when the Esso Development company was formed to conduct and co-ordinate Esso group research and development in Europe, he was appointed managing director. He held this post until 1949 when he became general sales manager of Esso. In 1951 he was appointed as a director of the company and in 1956 he became a managing director. In 1957 he assumed the duties of chief executive. Mr. Tett was chairman of the council of the Institute of Petroleum in 1947.

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Lord Brabazon of Tara is to open the Electrical Engineers (A.S.E.E.) Exhibition at Earls Court on March 17.

* * *

We deeply regret to record the sudden death on January 5 in Switzerland of Mr. Geoffrey Wynne Davies, O.B.E., M.A., M.Inst.T., commercial officer, Southern Region, British Railways. He was 54 years of age.

* * *

In a New Year message to 83,000 London Transport staff, the chairman, Sir John Elliot, says: "Our aim must be to earn our keep this year, and with determination we can do it. We must do all we can to fill the buses and trains in the off peaks because it is then—and not in the peaks as some people imagine—that net receipts are highest."

* * *

Mr. W. Brown, who was made regional accountant (designate), Eastern Region, in March last year, has been substantively appointed regional accountant with effect from January 1. He succeeds Mr. T. R. Hawkes, who retired on that date. Mr. A. G. Dawson is made assistant regional accountant.

* * *

Mr. C. W. Wroth, former general manager of the Potteries Motor Traction Co., Limited, has been appointed general manager of Trentham Gardens, Limited, a well-known North Staffordshire pleasure resort, and chief agent and financial secretary to the trustees of the late Duke of Sutherland. He takes up his appointments on April 1.

* * *

It is announced that Mr. W. L. Carter is to succeed Mr. A. A. Shoebridge as Commissioner for Government Transport in New South Wales when the latter retires on January 13. Mr. Carter was previously chief traffic manager of the Department of Government Transport and also the Deputy Commissioner.

* * *

Mr. C. Owen Silvers retired from the board of the Sunbeam Trolleybus Co., Limited, on December 31. At the end of February he is relinquishing his appointment as consultant to the parent company, Guy Motors, Limited. Mr. Owen Silvers is a former general manager of Wolverhampton Corporation Transport and played a considerable part in the revival of interest in trolleybuses in 1923-26.

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It is announced that Mr. J. G. P. Hamilton, A.M.I.Mech.E., M.I.Loco.E., chief mechanical engineer, Rhodesia Railways, will proceed on pension on February 2. Mr. Hamilton joined Rhodesia Railways as junior draughtsman in the locomotive department. He was appointed technical assistant at Bulawayo in 1936, mechanical assistant in 1937 and assistant mechanical superintendent in 1938. Mr. Hamilton became mechanical engineer, Bulawayo, in October that year and was promoted deputy chief mechanical engineer in 1947. He was appointed chief mechanical engineer in August, 1955. He is succeeded by Mr. H. J. Castle, who in turn is succeeded as assistant chief mechanical engineer by Mr. H. J. L. Dolan.

Inspecting Officer of Railways

APPOINTED an Inspecting Officer of Railways in the Ministry of Transport, Colonel J. R. H. Robertson, O.B.E., was educated at Wellington College, the Royal Military Academy, Woolwich, and Cambridge University, where he gained an honours degree in the mechanical sciences tripos. He was commissioned in the Royal Engineers in 1932 and attended a railway course at the Railway Training Centre, Longmoor, from 1935 to 1938, including a year's attachment to the North Eastern Division of the London and North Eastern Railway. On the outbreak of war he served in France and Norway; later he commanded the transportation wing of the Combined Training Centre at Inverary. For the rest of the war his work was concerned mainly with the movement of men, vehicles and stores across beaches. Since the war he has held various staff appointments including those of chief instructor in the Transportation Training Centre, 1946, and in the School of Military Engineering, 1954-56. In 1952-53 he commanded the Middle East Transportation Regiment, R.E., in Egypt. He has now retired from the Army to take up his new appointment.

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Mr. H. J. Castle, A.M.I.Mech.E., M.I.Loco.E., appointed chief mechanical engineer, Rhodesia Railways, as from February 2, served in the United Kingdom with the Midland and subsequently London Midland and Scottish Railways before emigrating to Rhodesia in 1928 as technical assistant (mechanical). There followed a series of appointments before, in 1941, he was released for military service as progress and planning officer to the War Supplies Committee. Towards the end of 1941 he was appointed general manager of the Eritrea Railway with the rank of major. He was released from active service in 1944 and shortly afterwards became mechanical engineer, Umtali. Finally, he became assistant chief mechanical engineer located at Bulawayo, in August, 1955.

* * *

The banquet and ball of the Metropolitan and South Eastern area of the R.H.A. will be held at Grosvenor House on March 9 at 6.45 p.m. for 7.30 p.m. The Minister of Transport and Mrs. Watkinson hope to attend and the Lord Mayor, the Lady Mayoress and the Sheriffs of the City of London will be guests of honour also.

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The Birmingham and Midland Motor Omnibus Co., Limited, announces the following appointments:

Mr. J. N. Tweedie, to be claims superintendent (formerly with the Potteries Motor Traction Co., Limited).
Mr. S. S. Hulse, to be publicity superintendent.
Mr. L. Wesley, to be tours superintendent.
Mr. W. J. Chester, to be superintendent, express services.
Mr. D. F. Sheppard, to be superintendent, chassis shop, central works.

* * *

The English Electric Co., Limited, announces that Mr. H. G. Nelson, M.Inst.C.E., M.I.Mech.E., M.I.E.E., managing director of the parent company, has been appointed deputy chairman of the following subsidiary companies of the group: D. Napier and Son, Marconi's Wireless Telegraph, Marconi Instruments, English Electric Valve, Vulcan Foundry, and Robert Stephenson and Hawthorns, and of the associated company, Marconi International Marine Communication.

* * *

A national sales and mileage division has been formed by the India Tyre and Rubber Co., Limited. It operates from India House, Kingsway, W.C.2, and will be responsible for co-ordinating the national sales and mileage activities through the sales managers in the United Kingdom. Mr. W. J. Nave, formerly district manager, North London, has been appointed sales manager of this new division. He has spent 30 years in the tyre industry and 21 of these with the India company. Further appointments to the staff of the new division are announced. Mr. F. E. H. Palmer, formerly sales secretary in Birmingham, is to be manager of mileage sales and deputy to Mr. Nave; Mr. R. W. Dittrich and Mr. G. E. Taylor, who formerly operated in the London region, are to be joint managers of commercial vehicle sales, while Mr. R. C. Robinson will be manager of passenger transport—South.

Mr. W. J. Nave

* * *

Mr. B. H. Harbour has been appointed chairman of the Road Operators' Safety Council for the year 1959, with Messrs. R. W. Birch, F. Broomfield, M. A. Holmes, R. MacKenzie, F. S. Taylor and A. J. Townsend, as vice-chairmen. Mr. Harbour is a member of the London Transport Executive.

* * *

The annual dinner of the Transport Golfing Society (London area) at the Connaught Rooms, London, saw the president, Mr. H. Hattersley (Dennis Brothers, Limited) in the chair; 600 members and their guests attended. Mr. Dickson Wright, M.S., F.R.C.S., proposed the toast, "The Society," and the president responded. "The Guests" was proposed by Councillor Norman Harris, junior vice-president, and was acknowledged by Mr. N. H. Dean (general manager, Yorkshire Traction Co., Limited).

OFFICIAL NOTICES

UNITED AUTOMOBILE SERVICES, LIMITED

GENERAL MANAGER

A GENERAL MANAGER will be required at the end of March next by this company which operates approximately 1,150 public service vehicles from headquarters in Darlington.

Applicants should have had extensive experience in passenger road transport operations.

Applications, setting out full details of age, present position, experience and indicating the salary expected, to be submitted before January 23, 1959, marked "Private and Confidential" and addressed to the Chairman, Tilling Group Management Board, 10 Fleet Street, London, E.C.4.

JAMAICA OMNIBUS SERVICES, LIMITED

VACANCY FOR CHIEF ENGINEER

JAMAICA Omnibus Services, Limited, invite applications for the position of Chief Engineer. The company operates the city services in Kingston, Jamaica; has a modern fleet of 170 Leyland vehicles; a Jamaican maintenance staff with European supervisors, and is equipped with modern workshops and equipment, stores and offices.

Applications are sought from individuals who hold a senior appointment within the omnibus industry and who have had administrative and technical experience in the maintenance of a fleet of public service vehicles and in the control of staff.

The appointment will be for an initial term of five years (subject to satisfactory service) and, subject to renewal, will continue thereafter on a three-yearly basis.

The salary will depend upon the applicant's experience and qualifications, but will be not less than £2,750 per annum, inclusive of an overseas allowance of £500 per annum. A rent-free house will be provided for a married man, or an allowance of £300 per annum in lieu thereof for a single man. A car is provided by the company. The company has a contributory pension scheme.

Passages will be paid to Jamaica for the successful applicant and family and three months' home leave will be allowed on completion of three years' service, with paid passages for the officer and his wife.

Applications, which will be treated in strict confidence, should be sent under private cover to The Secretary, The British Electric Traction Co., Limited, Stratton House, Piccadilly, London, W.1, to reach him not later than January 31, 1959, giving full particulars of the applicant's career with a front summary sheet showing:

1. Name and address.
2. Age.
3. Whether single or married and, in the latter case, the number and ages of any children.
4. Education.
5. Professional or technical qualifications.
6. Brief statement of present and previous appointments arranged chronologically.
7. Present salary.
8. Earliest date available to take up the appointment.

NYASALAND TRANSPORT CO., LIMITED
(Subsidiary of Rhodesia United Transport, Limited)

TRAFFIC MANAGER

THE above company, which operates Passenger and Freight Services in Nyasaland in the Federation of Rhodesia and Nyasaland, invite applications from Passenger Traffic Managers who have had previous experience.

The company operates approximately 100 buses and 70 heavy goods vehicles.

The position offers considerable scope for initiative and the commencing salary will depend on the qualifications and experience of the selected applicant.

Applications, which will be treated in strict confidence, should be sent to:

The Secretary,
United Transport Co., Limited,
Mounton Chambers,
Chepstow, Mon,

by January 31, 1959, and should include the following particulars:

1. Name and address.
2. Age.
3. Whether single or married and, in the latter case, the number and ages of any children.
4. Education.
5. Training.
6. Professional or technical qualifications.
7. Brief statement of present and previous appointments arranged chronologically.
8. Present salary.
9. Names of references.

IMPORTANT CONTRACTS

Persian Gulf Oil Harbour

WORK is to start immediately on the construction of a £4,000,000 oil jetty and boat harbour in the Persian Gulf under a contract awarded to Richard Costain, Limited, in association with Raymond World Wide Constructors. The project is being carried out by the Iranian Construction Group and is part of the £20,000,000 scheme which they are supervising on behalf of the Iranian Oil Exploration and Producing Company for a new pipeline and loading terminal which will make possible greatly increased production from the oilfield at Gach Saran. Berthing accommodation will be provided at the jetty for super tankers of 100,000 tons and the boat harbour will take tugs, lighters and other small vessels. The jetty will be a steel pile structure more than half a mile long and the boat harbour will be a rock breakwater with sheet pile wharves. The work is expected to be completed by the end of 1959.

Western Avenue Bridge Widening

London Transport has placed a contract with J. L. Kier and Co. (London), Limited, for the widening of the bridge carrying Western Avenue over the Piccadilly Line at Park Royal Station. The contract is valued at about £20,500 and the work should be completed in six months.

Indian Order for Diesel Equipment

A £3,000 order for diesel fuel pump servicing equipment received from India by Leslie Hartridge, Limited, is the first sizeable order to be placed by India for this type of equipment for some time, indicating a possible relaxation of that country's import restrictions.

More British Buses for Ceylon

A £70,000 contract has been received by Leyland Motors, Limited, from the Ceylon Transport Board for a further 36 Leyland vertical-engined Comet passenger chassis. Within the last 15 months earlier orders placed by this operator for Leyland Group passenger vehicles have included 100 Comet chassis, 100 underfloor-engined Albion Aberdonian chassis, 60 vertical-engined Albion Victor buses complete with M.C.W. bodies and 60 Leyland underfloor-engined Leyland Tiger Cub chassis, with a total value of £900,000. In the interests of standardisation all the vehicles ordered are powered by the Leyland O350 diesel engine.

Northwest Orient Orders Electras

A $29,500,000 (£10,000,000) order for 10 Lockheed Electra turboprop aircraft and spares placed by Northwest Orient Airlines, of America, is announced by the Lockheed Aircraft Corporation, with an option on two additional Electras. Northwest is the seventh American airline to choose the Electra and it has been ordered by eight operators outside the United States. The Lockheed Electra is equipped with Spraymat protection against ice formation on the propeller spinners applied by PacAero Engineering Corporation under licence from D. Napier and Son, Limited, Acton, which invented and developed the process.

B.O.A.C. Orders Decca-Dectra

As a result of comprehensive trials carried out in a Comet 2E aircraft, B.O.A.C. has decided to equip its North Atlantic Comet 4 fleet with Decca-Dectra equipment. The Decca portion of the combination provides highly accurate navigational information for short-range operation—up to distances of 300 nautical miles—while Dectra gives long-range coverage between the United Kingdom and Canada. Possibly the most outstanding feature of Decca-Dectra, apart from its extremely high accuracy, is the fact that the geographical position of the aircraft is shown continuously, being automatically traced by a pen on a moving chart. This form of presentation is exceptionally valuable in busy terminal areas such as London and New York.

New Type Railway Crane for B.R.

A new type of diesel-electric railway travelling crane designed for track work on lines electrified on the overhead system has been ordered by the British Transport Commission for the London Midland Region of British Railways. It has been designed by Taylor and Hubbard, Limited, Leicester, in collaboration with British Railways, as a prototype for track work on electrified lines where cranes with normal jibs cannot be used effectively. The cranked jib has a telescopic upper section that can be extended or retracted under load, and is capable of lifting 5½ tons at 18-ft. radius with the jib raised, diminishing to 1 ton at 40-ft. radius with the jib fully extended, when the crane will be able to work under overhead equipment which allows as little headroom as 14 ft. above rail level. Cross girders and screw jacks are fitted for lifting at extended radii and there is a match wagon to support the jib when travelling. The crane can travel at up to 5 m.p.h. under its own power and is equipped for speeds of up to 60 m.p.h. when being hauled in a train.

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TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

January 21—Vietnam.—International Co-operation Administration for 50 10-12 b.h.p. single-cylinder, 21 20-22 b.h.p. two-cylinder and 14 30-34 b.h.p. three-cylinder DIESEL MARINE ENGINES complete with reverse GEARBOXES and all STERN GEAR. Tenders to the Central Purchasing Authority, P.O. Box 280, Saigon. (ESB/30888/58/ICA.)

January 24.—Ceylon.—Ceylon Transport Board for 360 BUS CHASSIS, being 50 for 10 tons g.v.w. with 60 passengers, 300 for 7½ tons g.v.w. with 50 passengers and 10 for 4½ tons g.v.w. with 34 passengers. Tenders to the Chairman, Tender Board, Ceylon Transport Board, 200 Kirula Road, Narahenpita, Colombo, 5. (ESB/30890/58.)

January 25—Jordan.—Jordan Arab Army for 12 ARTICULATED TRACTORS and REFRIGERATED SEMI-TRAILERS, six of 10 tons and six of 25 tons capacity. Tenders c.i.f. Aqaba (duty free) to the Chairman, Central Tenders Board, Jordan Arab Army, Amman, with 10 per cent bank guarantee and quoting delivery date, which will be a decisive factor. (ESB/31889/58.)

January 29—Federation of Rhodesia and Nyasaland.—Rhodesia Railways for one lorry-mounted 7-8 ton DIESEL-ELECTRIC CRANE. Tender forms from Rhodesia Railways Tender Board, P.O. Box 1877, Bulawayo. (ESB/30518/58.)

February 16—India.—Indian Railways for the supply, erection, testing and setting to work and maintenance for six months of a complete MECHANISED HUMP YARD at Moghalsarai Tender documents available on loan from Export Services Branch, B.O.T. (ESB/28779/58.)

Export Opportunity—Tunisia.—The Tunis transport system, which at present consists of single-deck trams, trolleybuses and buses, has just been transferred from the control of a French company to the Tunisian Railway authority, which is understood to be considering the purchase of diesel buses to replace all existing vehicles. United Kingdom firms interested should send details and prices to Ingenieur-en-chef, Service d'approvisionment, Societé Nationale des Chemins de Fer Tunisiens, rue de Portual, Tunis. Literature and correspondence should be in French. (ESB/30746/58.)

SHIPPING and SHIPBUILDING

Victoria Dock Transit Shed

SHIPS of the United States Lines will from 1960 onward be using the new 700 ft. long, 200 ft. wide transit shed at No. 4 berth (south side), Royal Victoria Dock, London, on which work started recently. For the benefit of mechanical handling it will have a clear height of 20 ft., making it the largest in the P.L.A. system. To facilitate access, the berth itself will be extended by 80 ft. to 1,150 ft. and there will be a new quay 400 ft. long leading to the Connaught Road Passage, the canal which links the Royal Victoria and Albert Docks. A feature of the transit shed will be its gabled ends, each affording a covered area 150 ft. by 50 ft. and with a headroom of over 30 ft. within which mobile cranes may load or unload vehicles. Considerable container traffic is expected.

Air-Conditioning Conversions

THE 28,160-ton Orient liner *Orcades* has arrived at the Harland and Wolff yards in Belfast to be completely air-conditioned during the next three months. The P. and O. *Arcadia* will arrive in Belfast in April to have the same work done. Five more P. and O. and Orient Line ships are scheduled for the same operation in the future.

Bristol Rode the Recession

IN a year of shipping depression, the total net registered tonnage of shipping arriving at the port of Bristol from foreign ports in 1958 was 4,761,243 tons, an all-time record and a 25 per cent increase over the previous year. Arrivals from coastwise ports showed a decrease. The total tonnage of cargo passing through the port was 6,737,932 tons, compared with 6,418,998 tons in 1957, an increase of 319,000 tons. The total of foreign imports, 3,840,997 tons, was a peace-time record. Foreign exports were the highest since 1951, car exports in particular being double those of the previous year. Coastwise imports of petroleum increased but those of other traffics declined. Coastwise exports increased.

Liner Rates to Colombo Increased

CONFERENCE rates between the United Kingdom or Continental ports and Colombo are to be increased with effect from February 2 owing to serious delays in recent months to vessels arriving to berth there. It is stated that since the rates to Colombo were last reviewed increased port and labour charges, coupled with a marked deterioration in the rate of working, have resulted in a substantial increase in the actual cost of discharging cargo. Substantial amount of demurrage have been paid by the Ceylon authorities on tramp vessels carrying bulk cargoes, but it is pointed out that this form of compensation is not available to the conference lines, whose rates are charged on an "all in" basis which has not taken into account the exceptional expenses being incurred at Colombo.

Minimising Oil Pollution

A DEVICE for containing oil after an accidental pollution of the sea or of river waters by oil from cargo ships or tankers has been invented by a Norwegian engineer. It consists of a flexible boom which can be drawn round the patch of floating oil and so prevent it from spreading. The oil can then be concentrated and disposed of through suction pipes. The boom was invented by Mr. Trygve Thune, of Oslo. It consists of plastic-coated linen strips about 50 yd. long and 3 ft. wide, stiffened with aluminium rods and stabilised by lead weights at one-yard intervals. Its floats are of compact plastic cork and it rides vertically on the water, two feet below and one foot above the surface. The Shell Company in Norway sponsored and successfully demonstrated the device under actual conditions.

New York Workers and Containers

LONGSHOREMEN in the Port of New York at a mass meeting gave their leaders a mandate to seek a solution of labour problems involving the use of new cargo equipment on an industry-wide basis. Called by the International Longshoremen's Association (I.L.A.), New York district council, the meeting approved by a voice vote this three-point programme:

(*a*) the present system of hiring and gang size is to remain unchanged;
(*b*) the question of use of new equipment (automation, containers, etc.) is not to be settled by arbitration;
(*c*) the shipping industry is to be asked to sit down with the I.L.A. and work out a mutually satisfactory policy before expiration of the present contract next September.

Most of the speakers, all I.L.A. top officers, said they were not against progress, but objected to moves by the shipping industry to link waterfront progress with reductions in the size of work gangs, usually 21 men. The size of work gangs for different tasks was laid down in a contract with the New York Shipping Association. The I.L.A. president contended that this agreement had been made in good faith, but within two years they were confronted with proposed changes in that agreement that took the gang system out of the union hands and into those of the employers. The present situation arises partly as a consequence of growing container and trailer-van freight.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

I.C.I. (Hyde)

For administrative reasons, the leathercloth division of Imperial Chemical Industries, Limited, has been dissolved and becomes I.C.I. (Hyde), Limited, of which I.C.I. will be sole director and manager. Relations with customers and suppliers will not be in any way affected by the new arrangement.

United Dominions Trust

The United Dominions Trust, Limited, has acquired the whole of the issued capital of British Trusts Association, Limited, London, E.C.3. British Trusts Association was established by the late Sir Pierce Lacy in 1917 and has since then conducted a successful issuing house business. In recent years it developed a very successful business in investment and is well placed to provide permanent and long-term finance for commercial and industrial companies.

Associated Commercial Vehicles

Accompanying the accounts of Associated Commercial Vehicles, Limited, for the year ended September 30, 1958 (summarised in our December 27, 1958, issue) is a note regarding the reorganisation of the group. The office of director of engineering and development held by Mr. A. J. Romer thereby became redundant, and to facilitate the reorganisation, Mr. Romer tendered his resignation from that office and from the board. The board recommends paying Mr. Romer £9,000 as compensation for loss of office.

Printed by Odhams (Watford) Limited, St. Albans Road, Watford, Herts, for and published by, Modern Transport Publishing Co., Limited, Russell Court, 3-16 Woburn Place, London, W.C.1.